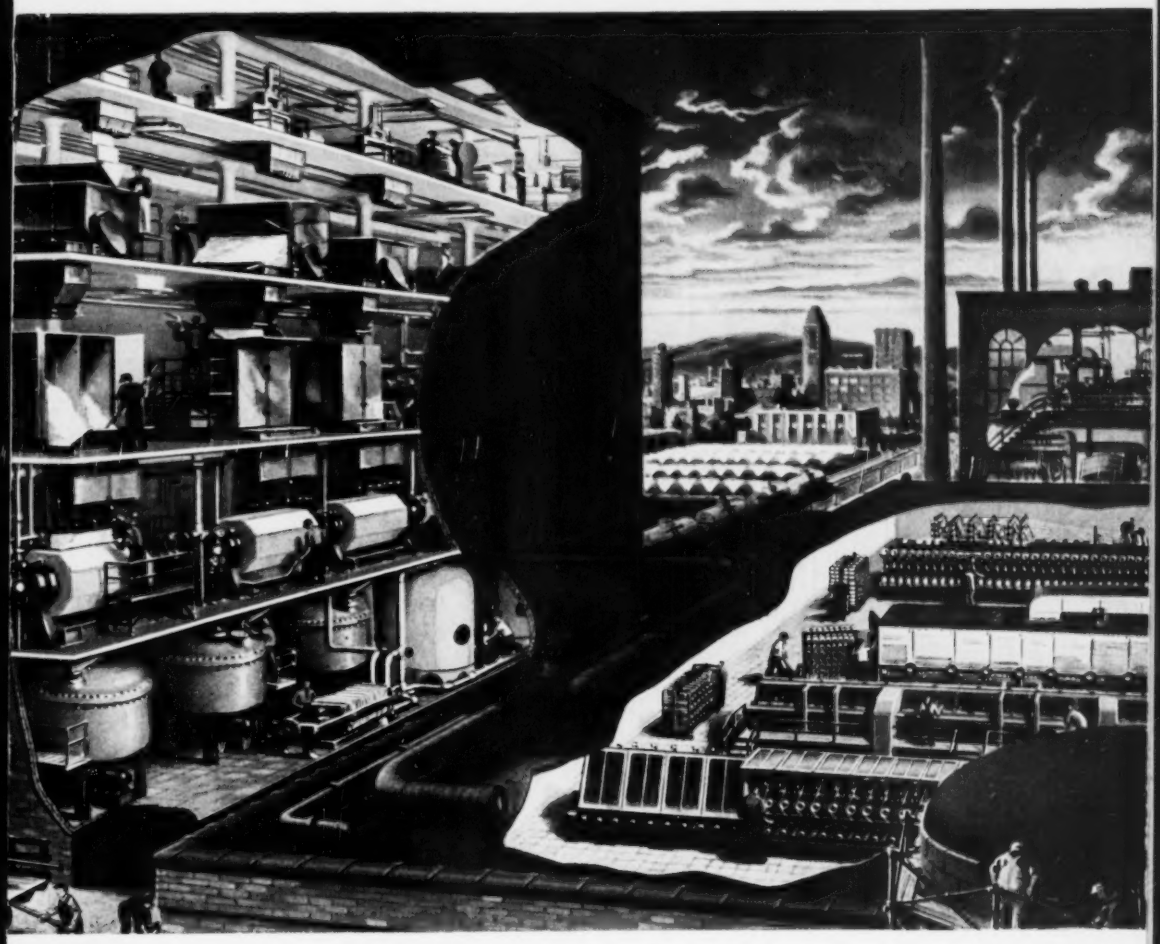
TEXTILE WORLD

A McGraw-Hill Publication ..... SEPTEMBER • 1949



HOW A RAYON PLANT OPERATES

Cover story-- page 105

25th Annual Synthetics Number

Survey of All Commercial Synthetic Fibers . . pages 111-130

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CLASSIFIED ACCORDING TO READER INTEREST

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THE *Long-Range* VIEW

Busy Plants

We are impressed by the number of textile mills we run into which are booked solid, running full, and making money. We are even more impressed by the things they have in common in spite of the fact that they range from lace manufacturing, through synthetics weaving and finishing, to woolen and worsted production. These mills even include one for thread manufacturing and several knit underwear and outerwear plants.

The things these varied mills have in common are (1) an aggressive management, (2) a good proportion of modern equipment or else old equipment modernized or specially modified, (3) even better equipment on order, (4) well-paid men—in every case at least one who has a national reputation as a technologist, (5) some kind of research program, and (6) at least one product either unique or the best in its field—with others being developed. In all cases, the managements of these mills recognize that the new products and techniques they are developing today will determine their profits tomorrow; that the equipment on which they are making money today must constantly be improved or replaced with better models.

In one case, a manufacturer is placing orders for equipment he cannot get delivery on for two years. (Yes, a few types of textile machines are still booked that far ahead.) While waiting for it, he is planning ways in which he can make improvements. Some improvements he has made in the past are now considered standard for his division of the industry; so he must go even further with his developments.

In none of these mills has there been, as in one other plant that is due to fold up, a wholesale dismissal of most of the research staff, in none a cancellation of plans to modernize, in none a laying off of "high-priced" men. (Key men should not be rated in terms of what their compensation is but in terms of what they produce for the company or have shown they save it.)

Several of these successful mills are not listed as producers of products from synthetic fibers, but all of them use synthetics in some form or another. Most of them have already worked with some of the very new synthetics not yet produced in large-scale quantities.

The managers of these mills all recognize that the lush days of the immediate postwar period are over. They are thankful for the chance they have had to make the money that they have plowed back into their plants. They know that the only way they will continue profitable operations is to continue to make money and reinvest it beyond the amounts normally allowed for depreciation. In every case, they have a policy of buying any piece of equipment that can be shown to pay for itself in a definite period of time. The period varies from plant to plant and from one type of equipment to another. A two-year period is about average.

Most of these mills are not in an integrated setup. But in every case they have such close working arrangements with their suppliers or finishers that they enjoy most of the advantages claimed for vertical integration. Their managers are not the type who would commit their mills to produce a product (even if it were the best in the world) without a knowledge of what the market needs and wants.

Don't copy any of these mills! By the time you do, they will be a mile ahead. But you would do well to study the principles which guide them and adopt such principles as apply to your own plant. If your mill is one that is busy and making money today, take time to find out just why you are in that fortunate position and what it will take for you to continue running successfully. Then, perhaps, you will not be quick to "cut expenses" to your detriment. Then, perhaps, you will not discontinue your modernization program and will encourage your key men to come up with ideas that will enable you to compete as long as there is a textile industry.

C. H. Bendigo

GOODYEAR INDUSTRIAL RUBBER PRODUCTS
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C
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to give you longer service

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. . . AND HERE IS WHAT IT MEANS

SACO-LOWELLize (*verb*)

(A) To utilize floor space so as to improve the flow of production.

(B) To co-ordinate the successive steps in processing.

(C) To reduce waste, spoilage, and unnecessary handling of stock.

(D) To realize the greatest economies in operating and maintenance costs.

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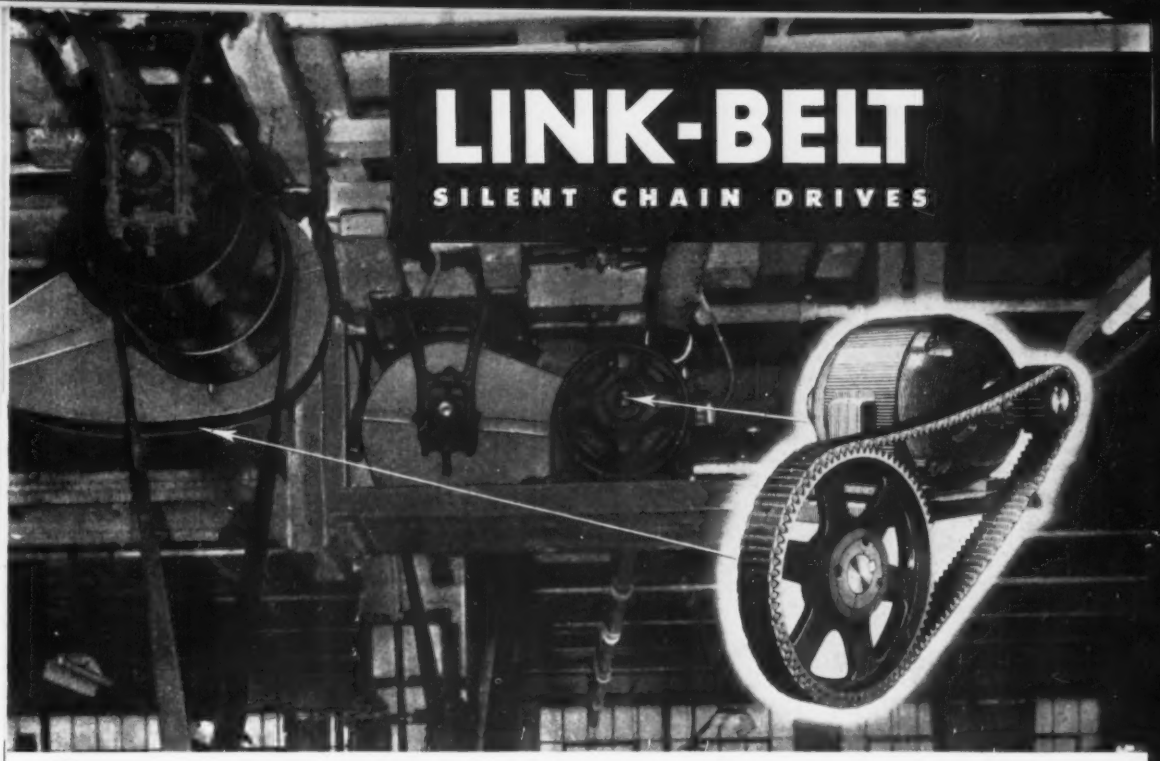

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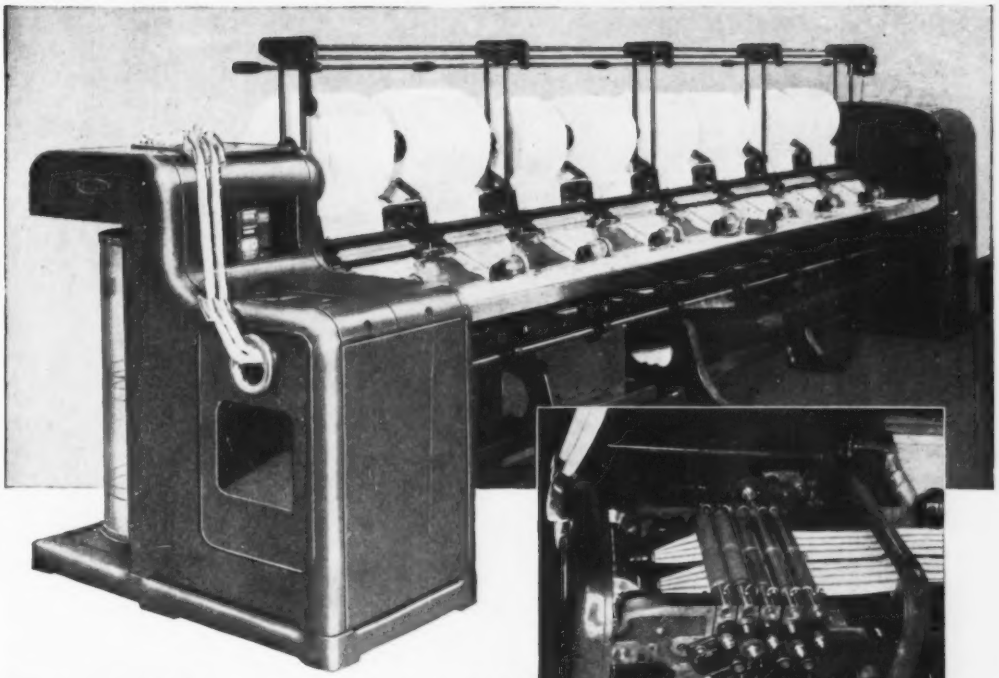

Close-up of Draw Box showing double trumpet arrangement for Bi-coil sliver.

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gives you ALL these benefits...

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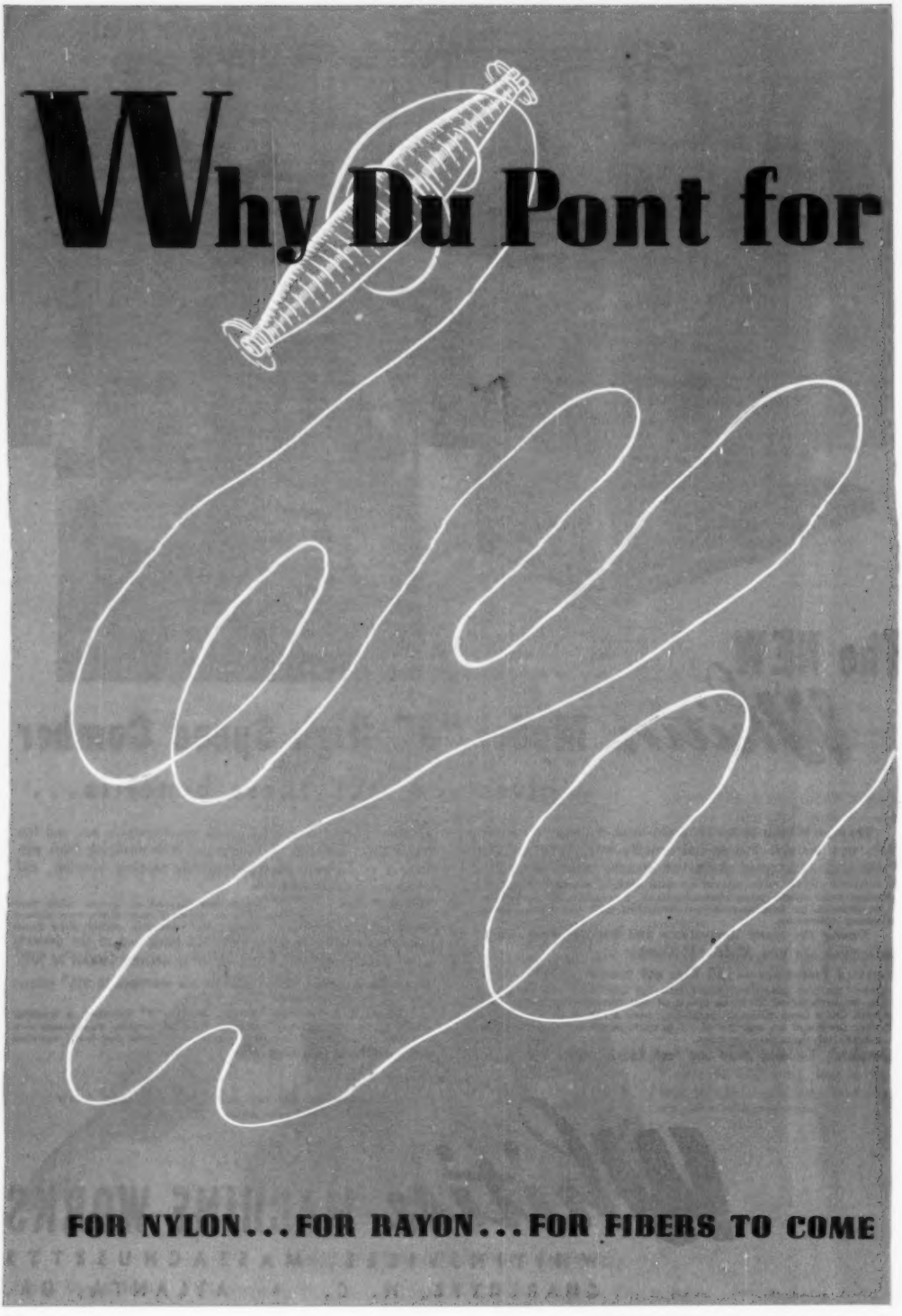
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(signed) R. A. Jenkins
Manager

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(signed) Harold D. Slocum
Agent

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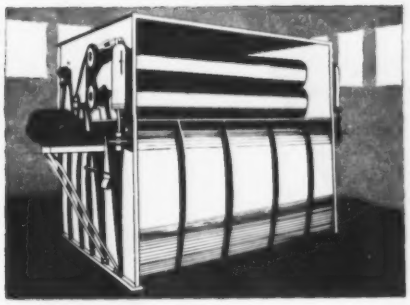

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*Reg. U. S. Pat. Off.

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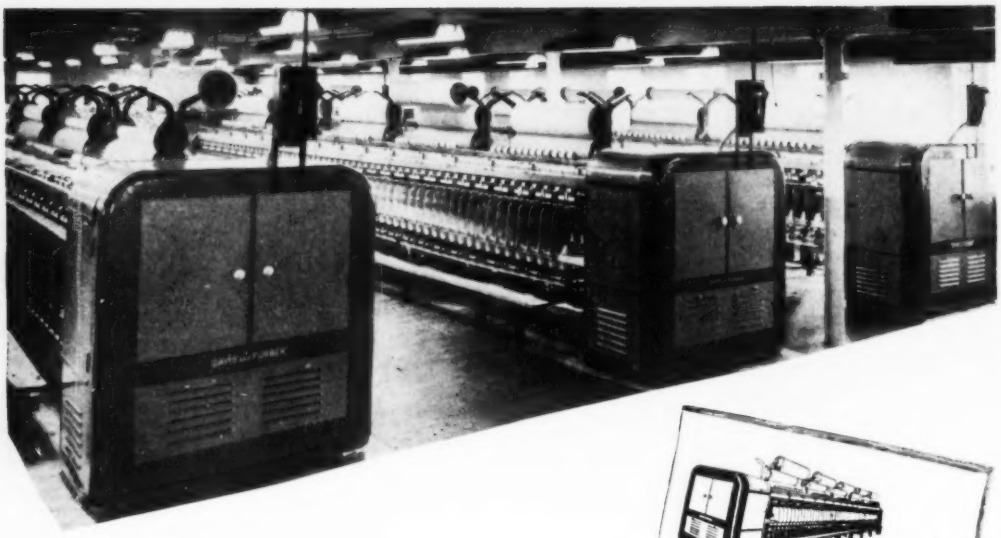


The First Step...

to LOWER SPINNING COST is to

Learn the Facts!!

When new machines are available that produce better quality goods, more economically than a mill's present equipment, management owes it to their mill to at least know all of the facts concerning these machines.

The new DAVIS & FURBER SIMPLEX MODEL "F" wool spinning frame is the most recent machine of its type. We have prepared a booklet describing this modern spinning frame in full detail.

Send for your copy. You should have this information to determine how much the new SIMPLEX MODEL "F" can improve your competitive position.

NORTH ANDOVER, MASS.

no more hand-me-downs

Stainless sheet and strip production is coming of age—no longer made on the hand-me-downs of carbon steel production, thanks to modern advances in strip mill practice. CRUCIBLE, drawing on this progress and on generations of *specialty* experience, has carried stainless development even further by building the world's first complete mill designed *specifically* for hot and cold rolling of stainless steels. In this $18,000,000 project, every building, every piece of equipment, has been built to incorporate the *best* of accepted modern practice, PLUS exclusive features designed by CRUCIBLE'S industry-famous technical staff.

Here stainless sheet and strip is produced in widths from ½" to 50" inclusive, in all gauges, grades and finishes. This new and important contribution to the production of stainless steel is vital news to every processor of stainless steel products. For now CRUCIBLE, one of the pioneers in stainless steels, rounds out an integrated program of stainless in all its forms—sheets, strip, plates, bars, wire, forgings, castings, and tubing (manufactured by the new subsidiary, Trent Tube Co.) To this program CRUCIBLE has applied its *specialty product* methods of quality control, methods that have given CRUCIBLE leadership in special purpose steels for half a century. Data sheets for all grades are yours for the asking. Your inquiries will be welcomed.

CRUCIBLE STEEL COMPANY OF AMERICA
405 Lexington Ave., New York 17, N. Y.
Branches, Warehouses and Distributors in Principal Cities

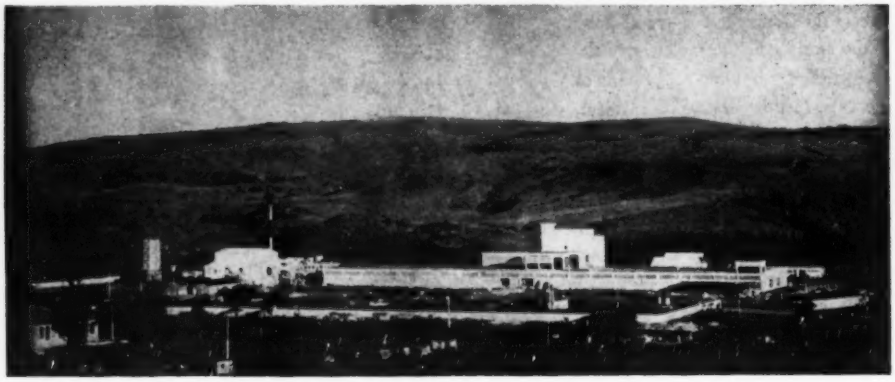
for stainless sheet and strip

CRUCIBLE first name in special purpose steels

hot and cold rolled **STAINLESS SHEET AND STRIP**

STAINLESS • HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE • STEELS

KOHORN



More Rayon for Chile

Rayon made by this modern new plant, the largest in Chile, costs less than imported yarn. This saving and benefit to the country's balance of trade is the result desired by Textile Manufacturers and Investors who promoted and supported construction of the plant.

It was built in seventeen months by Oscar Kohorn & Co., Ltd.—the world's leading builders of rayon plants and rayon machinery. Kohorn experts are technical managers of the plant, until the local staff gains sufficient experience to take over. Since 1948, the plant's output has aided the Chilean textile industry and the national economy.

Domestic markets of other countries can profitably be supplied by local rayon plants. With Kohorn engineering, rayon machinery and technical management a new rayon plant is certain to be built quickly and to produce efficiently, employing local labor and engineers.

Kohorn brings to your project over thirty-five years' skill and experience in Designing, Equipping and Operating complete rayon plants. Write for further information without obligation.

Complete Plants for the manufacture of Filament Rayon, Rayon Staple Fiber and Cellophane equipped in 12 months

OSCAR KOHORN & CO., LTD.

EXECUTIVE OFFICES

501 FIFTH AVE. NEW YORK 17, N. Y., U. S. A.

Pioneers of the Rayon Industry

SANDOZ PRESENTS *The color achievement of the month*

Snow-Mist Pastel ... BY COHAMA

The term "new look" is "old hat" now to the bright people who write the fashion ads, but to merchandisers and dyers alike, "new look" is the ever-present goal of their daily work.

To preserve the "new look" of their Cohama "Frostpoint" fabric — a pin-point weave rayon suiting — United Merchants and Manufacturers, Inc. use a crease-resistant finish. And for the same reason, they — like many another textile leader — use Sandoz dyestuffs: to preserve original color against light, perspiration and cleaning.

A new Sandoz product dedicated to the "permanent new look" is

CUPROFIX

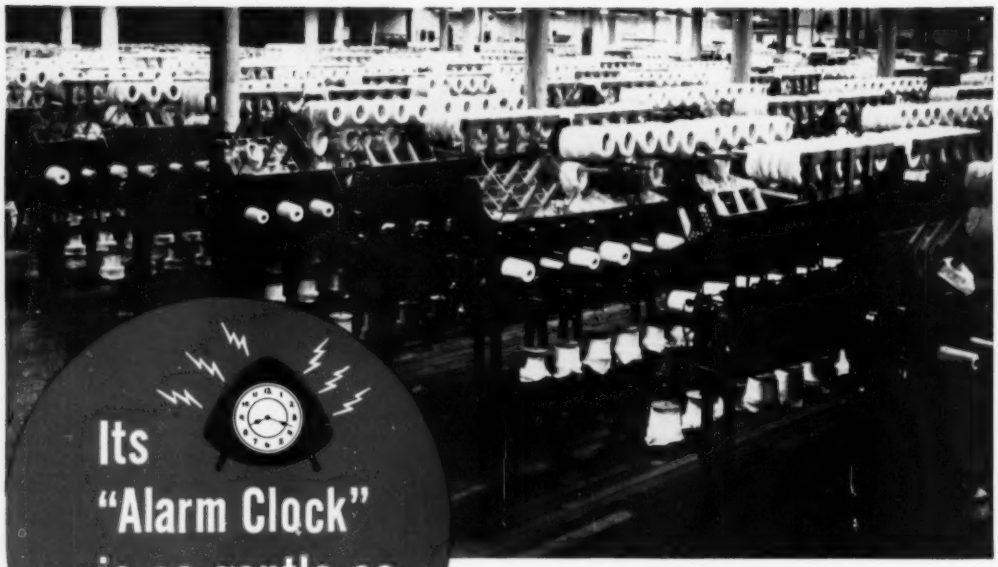
an after-treatment which, when applied to a selected group of direct dyestuffs, greatly increases their fastness to perspiration and washing. Used with certain resins, CUPROFIX increases the efficiency of the resin application and improves the results.

Ask the Sandoz representative about CUPROFIX. And for any chrome, acid or direct dyes ... or auxiliary chemicals ... for both natural and synthetic fibres ... be guided by these successful Sandoz "color achievements".

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

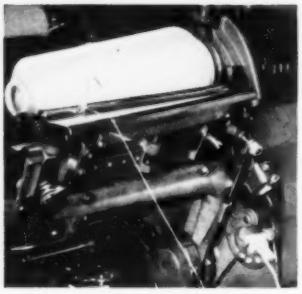
Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto • Other branches at Providence, Paterson and Montreal

SANDOZ *thinks ahead with textiles*



Its "Alarm Clock" is as gentle as it is accurate

...to protect the quality and insure the uniformity of Universal *"PreciseWind"* Cones



No. 50 Positive Sizing Attachment

You can attribute the world-wide preference for the Universal method of precise-winding to many things – and one of them is its adaptability to a great variety of winding requirements.

Where absolute uniformity of packages is desired, the machine is equipped with the Positive Sizing Attachment which is so accurate that it will knock off the spindle within one layer of the predetermined size.

This is accomplished without exerting *any pressure on the package* itself.

The accuracy of the attachment is such that should the machine be left unattended, the spindle can be depended upon to knock off automatically when the package reaches full size.

The Positive Sizing Attachment can be installed on any No. 50 machine now operating and will accommodate any type of yarn.

UNIVERSAL WINDING COMPANY

P. O. Box 1660 · Providence 1, R. I.

Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

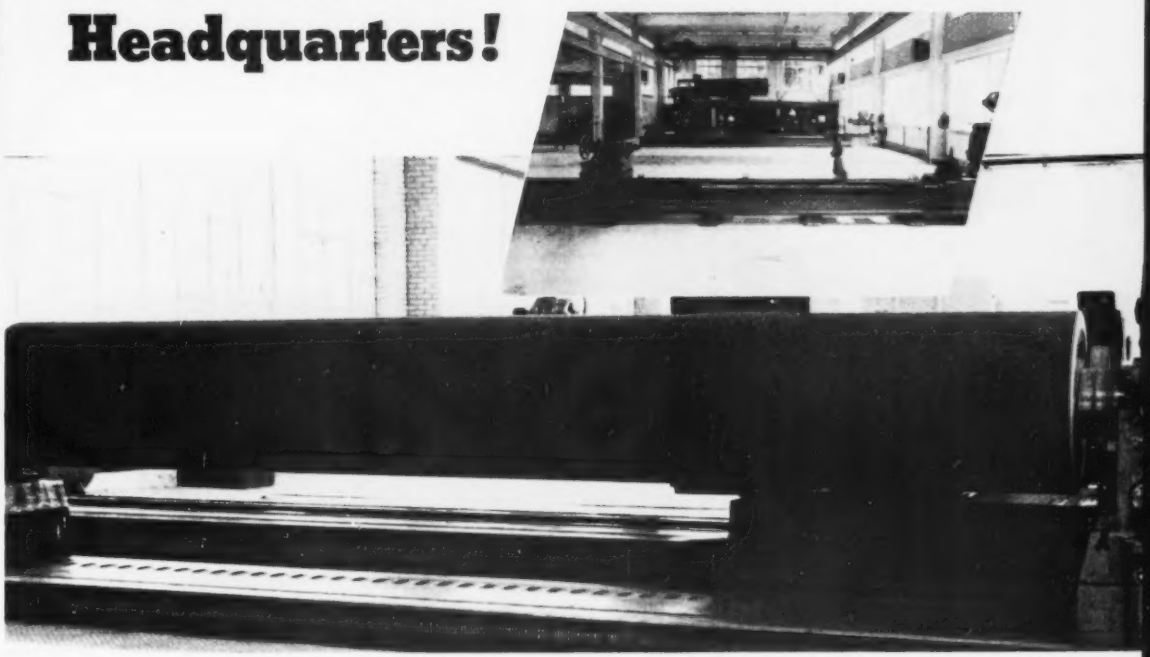
WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

Universal Precision Winding USED FOR MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES

There's a NEW LOOK at Rubber Roll Headquarters!

Above: Exterior of new Ward plant addition at Stowe-Woodward, Inc.

Below: A section of the interior looking toward elevated loading platform. Farrel Grinder in rear, lathes in foreground, vulcanizers at left.



New 42' 3" Farrel Rubber Roll Grinder, LARGEST AND LONGEST OF ITS TYPE IN THE U.S.A.

You're looking at Stowe-Woodward's new Ward plant addition . . . built and equipped for the single purpose of making the finest rubber covered rolls to your most exacting requirements. Here you will find the tools, the will, and the skill that have justly made Stowe-Woodward the place to turn when quality is basic, service is urgent, or a new rubber roll development must be pioneered.

Typical of the new equipment is the Farrel Roll Grinder which will grind and crown rubber rolls 60" diameter by over 300" width of face with tolerances held to .0005". This grinder and other new facilities symbolize our determination to serve you even better in the days ahead.

STOWE-WOODWARD, INC.

Craftsmen in rubber

NEWTON UPPER FALLS 64, MASSACHUSETTS

Heart of a Sweet-

ALLIS-CHALMERS TEXTILE MOTORS

Other Money-Saving AC Products for Textile Mills

TEXROPE V-BELT DRIVES

Most complete line of V-belt drive equipment backed by greatest engineering experience in the industry. New Vari-Pitch Automatic Sheave changes speed when motor is moved. One hand makes all changes without stopping machine. 100% speed range. 1½ to 40 hp.

DIELECTRIC HEATER FOR FAST DRYING

Allis-Chalmers dielectric heaters are setting new standards of speed and quality in rayon cake drying and twist setting. Heat any size or shape of textile package evenly from core to surface. Dries 1 pound cake of rayon in 30 minutes. Engineering and cost studies made without obligation.

Running Loom

Built to beat today's high maintenance costs... made to give you top output from both new and modernized equipment. Check these advantages:

REDUCED BEARING MAINTENANCE
Factory lubricated and sealed ball bearings get just the right amount of the right grease. Run without attention for years. No cost for lubricant and lubrication over long periods of operation.

SMOOTH RUNNING UNDER PULSATING LOAD
Motor is smooth running under constantly shifting loads of loom operation. Extra stiff cast iron frame resists distortion under strain and keeps bearings in perfect alignment.

EXTRA OVERLOAD CAPACITY FOR BREAKING-IN
Allis-Chalmers Loom Motors have the extra power needed for efficient operation during the stiff break-in period. You get full production immediately from looms equipped with Allis-Chalmers Loom Motors.

For Modernization or New Looms
When modernizing to increase production and to lower cost . . . or when buying new looms . . . specify Allis-Chalmers Loom Motors for that smooth "sweet running" sound that means efficiency and higher profits. In sizes and speeds to meet your requirements.

Quick-Clean Textile Motors
Especially designed for general textile mill use, these Allis-Chalmers motors have wide open air passages, smooth internal surfaces and efficient fans that blow out lint and dirt. They will not clog and overheat. Sealed bearings protect surroundings from grease, require no attention for years. Sizes to suit the usual requirements of spinning frames, twisters, etc.

A-2830

Texrope, Quick-Clean, and *Vari-Pitch* are Allis-Chalmers trademarks.

Ask for Free Bulletins and Engineering Information

Get complete information on these and other cost-saving A-C products for the textile industry. Write for these free bulletins today.

Allis-Chalmers Loom Motors	**51B7111**
Texrope Drives	**20B6051**
Vari-Pitch Automatic Sheave	**20B7223**
Dielectric Heater	**15B6431**

Power Generating Equipment, Transformers, Circuit Breakers, Power Distribution Equipment **25B6150**

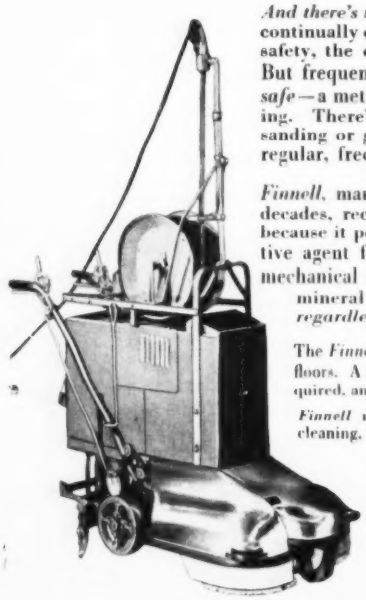
ALLIS-CHALMERS, 1056A SO. 70 ST.
MILWAUKEE. WIS.

A-C ALLIS-CHALMERS

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

There's No Substitute for It!



And there's no substitute for wet-scrubbing oily wood floors! **Where oil drops continually on floors, as in textile mills, *frequent cleaning is essential.* Worker safety, the elimination of fire hazards, and good housekeeping require it. But frequent cleaning calls for care in selecting the method. It should be *safe*—a method that won't injure floors regardless of the frequency of cleaning. There's a time and a place for occasional reconditioning of floors by sanding or grinding down the floor surface, but that is no substitute for a regular, frequent cleaning schedule as required in textile mills.**

Finnell, **manufacturers of floor-maintenance equipment for more than four decades, recommends wet-scrubbing for cleaning oily wood floors. First, because it permits the use of a fast-acting mineral oil solvent, the most effective agent for emulsifying grimy oil and grease for speedy removal with mechanical equipment. Second, because wet-scrubbing with a fast-acting mineral oil solvent, such as *Finnell's Setol,* is *thoroughly* safe for floors *regardless of the frequency of cleaning.***

The *Finnell* illustrated at left is a *Self-Propelled Scrubber-Vacuum* for use on large-area floors. A complete cleaning unit *all in one,* it applies the cleanser, scrubs, rinses if required, and picks up. Cleans up to 8,750 sq. ft. per hour!

Finnell makes equipment for dry-scrubbing as well as wet-scrubbing, and for dry-cleaning, waxing, and polishing; also a full line of *Cleansers, Sealers, Waxes, Steel-Wool Pads, Mop Trucks,* and other accessory equipment. And there's *a Finnell man nearby* to help train your maintenance operators in the proper use of *Finnell Equipment and Supplies.*

For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1909 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

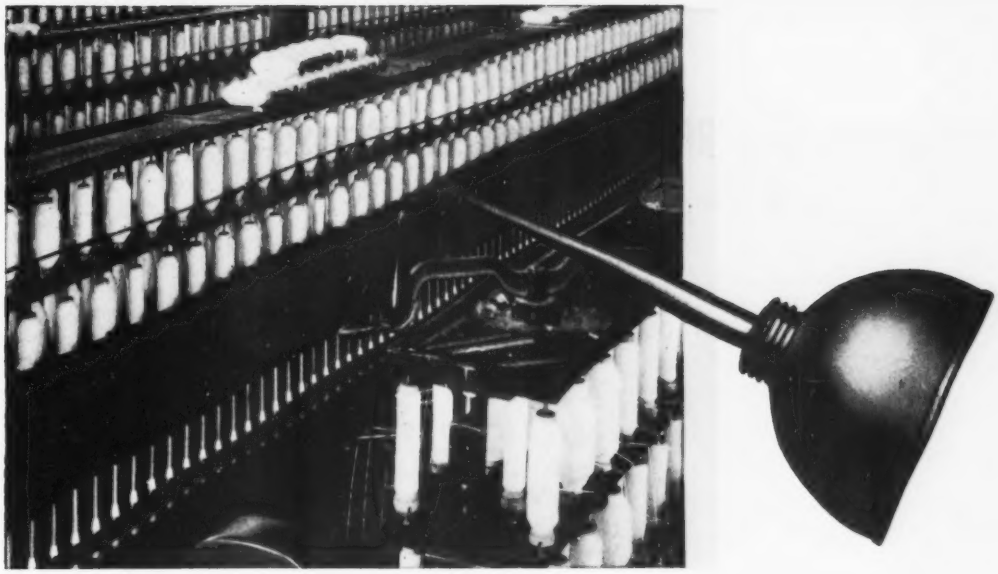
Everything FINNELL for Floor Care

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES



Are you Squirting away profits?

● What's that oilcan doing in this picture of a modern textile mill? It's the most expensive, old-fashioned piece of equipment in the whole place. Keeps a crew of men squirting and guessing at thousands of bearings. Even then bearings run dry, shut down a machine or a roomful of machines. What should be top grades come out seconds. For example, it takes only a drop of oil leaking out of a licker-in box to dirty the yarn and injure the card clothing. And, with fly collecting on oil-ooze, there's the hazard of high torque, scored shafts and worn bearings.

So the logical first step in any program of modernization is replacing those wasteful, hazard-ful plain bearings with Fafnir Ball Bearing Textile Units . . . grease lubricated and sealed against leakage and bearing contamination. Instead of once-a-shift oiling, just once-a-year greasing. Save lubricant, labor, machines and spoilage and boost quality all along the line.

There's a Fafnir Ball Bearing or complete ball bearing unit ready to mount for every spot in every standard textile machine. All textile-designed, such as the Fafnir Wide Inner Ring Ball Bearing with the Self-Locking Collar and Plya-Seal, the perfect contact type seal. Available in all sizes from your handily located Fafnir distributor. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR PLYA-SEAL BALL BEARING . . . A contact type seal with unique features. Requires no extra width in the bearing. Its diaphragm of synthetic rubber impregnated fabric and split retaining ring of stainless steel can be easily removed for inspection and relubrication . . . and just as easily replaced.

FAFNIR BALL BEARING PITMAN ROLL STAND, heavy series, for builder motion of a Spinning Frame. It's a double row design to handle the heavy rail operation. Protected both sides with Fafnir Plya-Seals.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

promoting YEAR 'ROUND fashions in cottons!

...the *Crisp Look* of starched cottons

For years the cotton textile industry has talked about a program to promote use of fashions in cotton the year around.

The "Crisp Look" launched by Corn Products Refining Company *is* such a program.

...The "Crisp Look" is featured in full color ads month after month in the leading national women's magazines ... by big ads in *Life* ... by ads in 16 national publications, all told.

...Featured on the air, over television, in editorial columns of the magazines and newspapers ... in department store ads ... in labels and promotions of great dress houses, the "Crisp Look" sells the use of cottons.

Make the "Crisp Look" of starched cottons *your own* theme for year 'round promotion of all your fashion cottons.

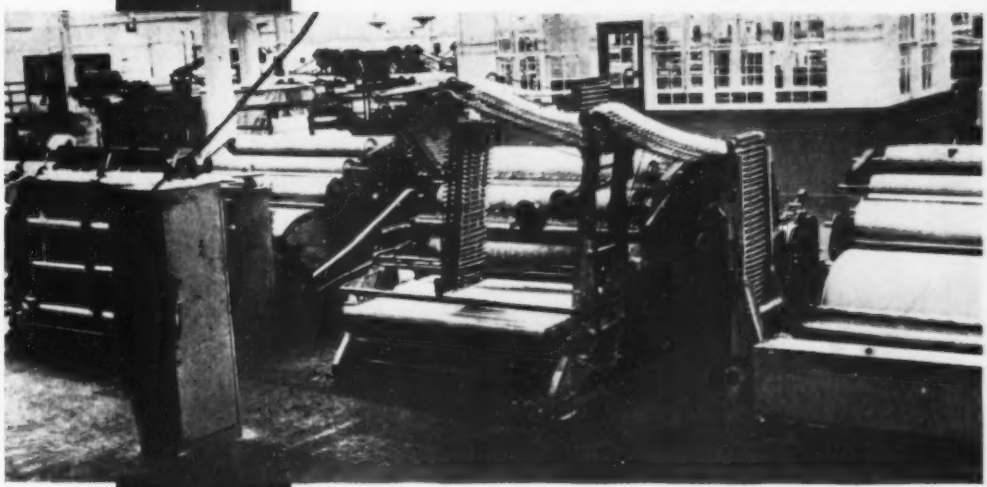
CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.

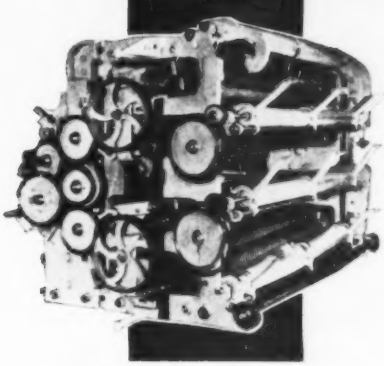
producers of starches for the textile industry

THESE *Kate Greenaway* DRESSES

are featured in Linit® Starch's August and September magazine advertising ... aggressively merchandised by Kate Greenaway to hundreds of stores.

200 GOOD ENDS FROM 80 INCHES WIDTH





Special design features of the Tape Condenser give positive and even division of the web—tapes do not steal from each other.

BUILDERS OF QUALITY
MACHINERY SINCE 1886

NEWPORT NEWS WOOL CARDS TESTED AND PROVEN

1. Large doffers for better carding, resulting in stronger yarns at higher production rates plus less frequent machine outage for stripping.
2. Greater yield through minimum loss of stock.
3. Thorough blending, effecting better manipulation and more economical use of stock.
4. Wide range of speed adjustments at all points enabling the machine to accommodate all types of materials and make roving from the coarsest to the finest counts.
5. Carefully machined rolls, accurately mounted, permitting uniform close setting of workers and strippers.
6. Two intermediate side draw feeds which will handle long or short fibres.
7. Feed hopper of large capacity with a very accurate weighing mechanism.
8. Low overall height for unobstructed vision over the machine and ready removal of workers and strippers.

For Specific Details Write For Illustrated Folder

NEWPORT NEWS SHIPBUILDING AND DRY DOCK CO.
NEWPORT NEWS, VIRGINIA

US brings you the GREATEST

IT'S A PRODUCTION BOOSTER

IT'S A YARN SAVER

IT'S PRESSURE-PROOF

See how ACROPAK design combines two modern materials in a bobbin engineered throughout for today's twisting needs...

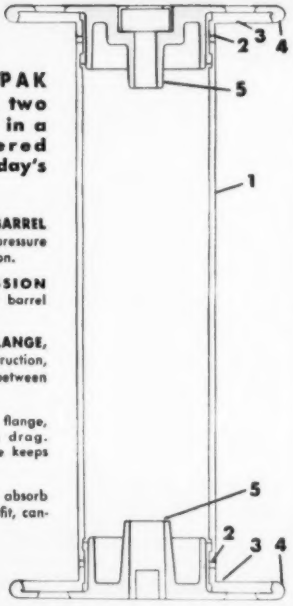
(1) **ALUMINUM ALLOY BARREL** withstands tremendous pressure of nylon yarn without distortion.

(2) **NYLON COMPRESSION RING** compensates for barrel contraction or expansion.

(3) **ALUMINUM ALLOY FLANGE,** by unique drawn construction, eliminates yarn entrapment between barrel and head.

(4) **NYLON RIM** protects flange, resists wear of yarn drag. Exceptional impact resistance keeps edge nick-free.

(5) **NYLON BEARINGS** absorb shocks, retain accurate fit, cannot freeze on spindle.



Revolutionary Advantages also Available in ACROPAK Drawn Aluminum Alloy TAKE-UP and HEADLESS BOBBINS

TAKE-UP BOBBIN

DRAWN ALUMINUM CONSTRUCTION eliminates conventional joint between barrel and flange.

EXCEPTIONAL STRENGTH Aluminum alloy flange and reinforced barrel take heaviest pressures without distortion.

ABSOLUTE CONCENTRICITY Assured by unique construction from aluminum sheet, manufactured to rigid specifications, processed with ACROMETAL's special precision dies.

OTHER EFFICIENT FEATURES More strength with less weight eases handling in transfer. Unaffected by high steaming temperatures. ACROMETAL Anodizing eliminates yarn stain.

HEADLESS BOBBIN

STRENGTH AND DURABILITY far beyond normal need assured by ACROMETAL fabricated tube and gudgeon of aluminum alloy with stainless steel collar.

COST SAVING ACROPAK eliminates expensive MANDREL. Low initial cost is far less than that of conventional mandrel-cylinder assemblies.

LABOR SAVING One operation instead of five in take-apart. Saves up to 75% operating time.

ABSOLUTE CONCENTRICITY assured by ACROMETAL's unique construction, as in twister and take-up bobbins.

ADVANCE IN BOBBIN DESIGN

in 50 years!

Nylon-Armored Aluminum Alloy ACROPAK BOBBIN solves synthetic yarn twisting problems . . . sets new standard of operating efficiency

Year after year, U S has been a leader in bobbin development, offering new designs to meet processing needs for each new fiber introduced.

Now, U S brings you ACROPAK BOBBINS to solve the unique problems of handling nylon and other high-strength synthetics. ACROPAK BOBBINS are far more than an "improvement" of conventional bobbins. Entirely new techniques and new materials are employed to provide a revolutionary lightness, strength and durability that set entirely new standards of efficiency.

Your first trial of ACROPAK will show you why they give a new lift to production and quality. You can run higher speeds because there's no "dead" weight to wear spindle bearings . . . because ACROPAK BOBBINS start true—stay true. You eliminate slubs, breaks, and waste because yarn flow is unimpeded on and off the bobbins. And, because ACROPAK BOBBINS are virtually indestructible in normal use, your bobbin cost-per-year will be lower than you ever believed possible.

ACROPAK BOBBINS can be made to fit all standard spindle dimensions and drives. If your requirements are special, consult U S regarding development of an ACROPAK to meet your needs. Your U S representative is prepared to show you samples and discuss your synthetic yarn processing problems with you.

U S Bobbin & Shuttle Co., Lawrence, Mass.

BEFORE YOU CHOOSE *any* bobbin for synthetic yarn processing, find out why your best buy for top efficiency and lowest operating cost is ACROPAK.

ACROPAK

Made by Acrometal Products, Inc.
World's Leading Manufacturers of
Drawn Aluminum Bobbins and Spools

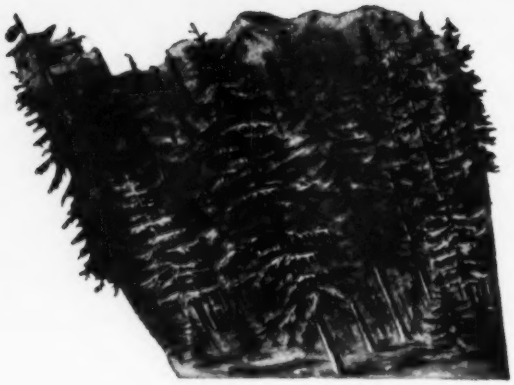
A Division of

U S BOBBIN & SHUTTLE CO.

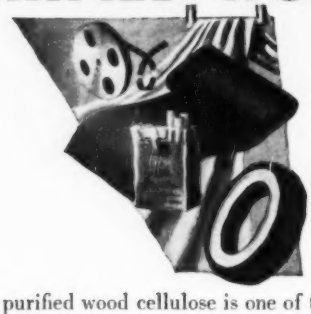
PROVED In Mill Operation:

Oscar Heinman Corporation, leading Yarn Processors say:

"Our tests prove ACROPAKS superior in construction, much stronger, lighter in weight, more concentric and more accurately made than any nylon take-up bobbins ever used by us before."



WHAT IS PURIFIED WOOD CELLULOSE USED FOR?



Highly purified wood cellulose is one of the Country's most important chemical raw materials.

More than eighty per cent of all the viscose rayon and acetate yarns produced in this country are made from it. These yarns find their way into the daily living of everyone, in many types of wearing apparel for men, women, and children—and in a wide variety of other familiar articles.

The tire manufacturers use purified wood cellulose in increasingly large quantities in the form of high-strength viscose rayon cords and fabrics that lengthen the lives of automobile and truck tires.

Cellophane is made from purified wood cellulose, and so is another widely used transparent packaging material—cellulose acetate sheet and film.

Photographic film and paper—vulcanized fiber—lacquers—and many other related products also are made from this basic raw material.

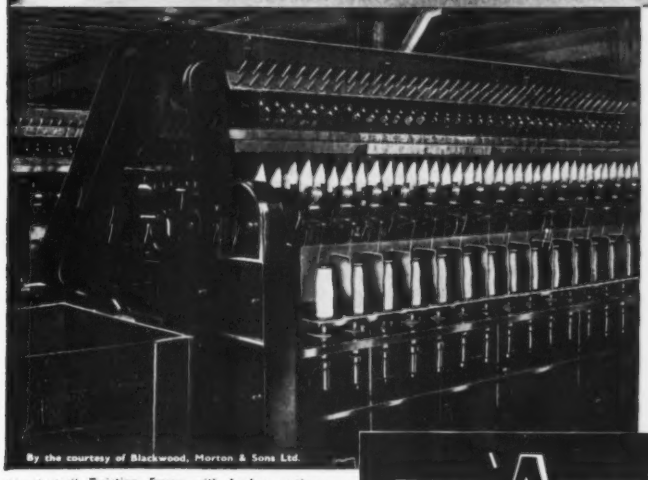
Supplying highly purified wood cellulose produced by chemical processes is Rayonier's job. A large part of the wood we use comes from our own forest properties, which are under management that keeps them continuously productive. Research by our scientists has resulted in a number of types of wood cellulose, each developed to give best results in making the end products for which it is used.

RAYONIER
INCORPORATED

EXECUTIVE OFFICES: 122 East 42nd Street, New York 17, New York • MILLS: Hoquiam, Port Angeles, Shelton, Washington; Fernandina, Florida

PRODUCER OF HIGHLY PURIFIED WOOD CELLULOSE for TEXTILES • TIRE CORD • CELLOPHANE • PLASTICS

Twisting Frames



By the courtesy of Blackwood, Morton & Sons Ltd.

"Axminster" Twisting Frame with Locker motion

for

WORSTED YARNS
WOOLLEN YARNS
SILK & RAYON
YARNS & FLAX
ETC. ETC.

THE 'Axminster'

for

- Larger Packages
- Increased Production
- Higher Efficiency

P-S-S AND S LTD

PRINCE-SMITH & STELLS
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bayard PSS/11

THE CASE OF THE MISSING BUILDER WHEEL

that resulted in reduced yarn breakage

MILL men consider the loss of the builder wheel as good-riddance. The HACOBA'S unassisted eye feeds and traverses so smoothly and with such unvarying tension that yarn breakage is rare. Particularly on rayons, will this one feature alone prove invaluable. Carrying the case to its conclusion, the four full bobbins are gently dropped in two stages, preventing fiber damage.

For further clues as to why the original HACOBA is the world's most popular winder, write for our eight page folder of technical data.

TRADE MARK

THE ORIGINAL HACOBA FILLING WINDER

winding 4 bobbins at one time

The HACOBA is FULLY AUTOMATIC, winding on every type of bobbin, pirn, tube or quill for any loom. When the bobbins are filled to a predetermined length, it stops, traps and cuts the thread, lowers bobbin into the tray, inserts new one and starts winding again — entirely without human aid. The HACOBA is an all round winder for cotton, worsted or rayon, even the bobbin size accommodation can be changed in 5 seconds.
Send for full details.

Atkinson, Haserick & Co.
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PLATT BROS. & CO. LTD.
HOLDSWORTH GILL SCREW CO. INC.
STANDARD FABRICATORS
ROBERT LEVAUX & CO.
THOMAS BROADBENT & SONS LTD.
WILLIAM AYRTON & CO. LTD.
PLUTTE, KOECKE & CO.
THE CENTRIF-AIR MACHINE CO., INC.

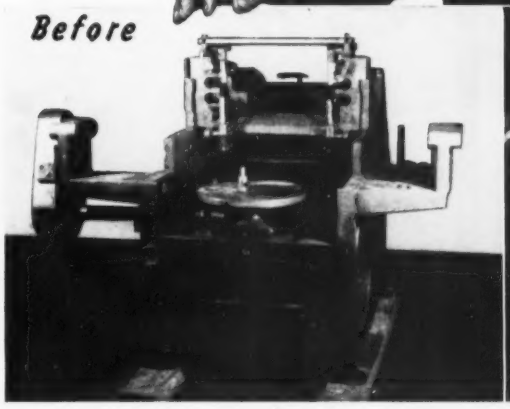
HOLDSWORTH GILL SCREW CO., INC.

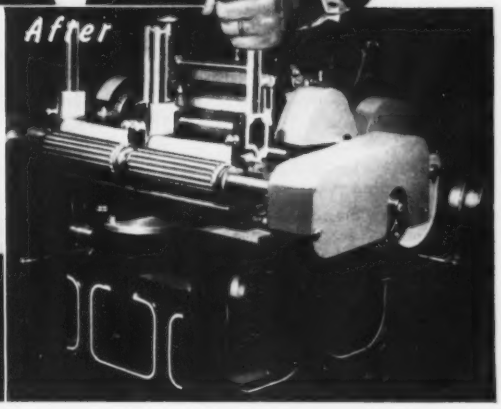
"Save up to 40% on Gill Boxes!"

REBUILD Save up to 40% of the cost of a new gill box by using those old frames and girts. In two weeks time your unproductive boxes can be modernized with new HOLDSWORTH intersecting heads, gearing trains, back roll assemblies, balling or can deliveries, screws, fallers, covers, etc. A shining and virtually new machine will be returned, ready to fit into your stepped-up-production line.

CONVERT Since 1920, HOLDSWORTH has converted thousands of open gill boxes to more productive intersecting machines. This HOLDSWORTH innovation has made speeding-up and overloading normal procedure. If you have an open head liability, get our estimate on turning it into an intersecting asset. Write for a HOLDSWORTH estimator to visit your mill, without any obligation on your part.

This same single head, double delivery, balling gill box shows the amazing results of HOLDSWORTH rebuilding.





EXCLUSIVE SALES AGENT

Atkinson, Haserick & Co.
BUSINESS ESTABLISHED 1823
Textile Machinery Agents and Engineers
211 Congress Street Boston 6, Mass.
BRADFORD, ENGLAND, 8 CURRER STREET

Visit Our Stands

TEXTILE RECORDER

TEXTILE MACHINERY EXHIBITION

No's: 102, 83, 148

Belle Vue
Manchester
England
Oct. 12 to 22
1949

Spinners of cotton, cotton waste, cut staple, wool and rayon, and manufacturers of cloth made from these yarns, will find plenty to interest them in the range of machinery which includes the following:

COTTON WASTE AND COTTON: Small pattern waste card; cotton card fitted with "Nuclotex"; new M.S.2. high draft speed frame; 2-M.I. ring spinning frames; conversions to ring spinning frames.

SYNTHETICS: M.U.I. uptwister for light packages.

WOOL: Auto-feeder, single part carder and tape condenser; Axminster carpet loom, setting frame and creel.

SIZING: The Hibbert model A12 moist air sizing and drying machine.

RAYON: The model 5A centrifugal viscose rayon spinning machine; viscose turbine mixer (these two machines are manufactured and sold by our associated Company, Dobson & Barlow Ltd. Bolton).

ALL ENQUIRIES TO:
ATKINSON, HASERICK & CO.
211 CONGRESS STREET
BOSTON 6, MASS.

PLATT BROS (SALES) LIMITED

OLDHAM ENGLAND

Marketing the textile machinery made in the works of:
DOBSON & BARLOW, LTD., BROOKS & DOXEY, LTD., PLATT BROTHERS & CO., LTD., ASA LEES & CO., LTD., HOWARD & BULLOUGH, LTD., JOSEPH HIBBERT & CO., LTD.

E 1

Follow the Footsteps of "Walking Charlie"

and Cut Your Maintenance Costs

"Walking Charlie," the eight-legged wonder of the shoe industry, is no Rube Goldberg contraption. Not by a country mile. It's an accurate measuring device for comparing the materials, construction, and *wearability* of men's and women's shoes. It's an idea in action . . . *the sound idea of testing products* before they're put to work.

Why not Test Paints?

It pays off with shoes. It pays off with paints. Try it and see. Compare any paint you choose with Barreled Sunlight paint . . . *not* in the can *but on the wall.* Simply test a gallon of each . . . thinned according to directions and properly applied. Check closely the comparative results . . . in yardage; in solid coverage per coat; in appearance after drying; and, *in painting time required*, a factor that represents 80% of the cost of a good paint job.

You'll see which is best with this test. You'll find that for a lower over-all cost, Barreled Sunlight will give you a better-looking, longer-lasting paint job than any other paint on the market.

Think it over. *Talk* it over with the Barreled Sunlight representative. He'll call at your request. Write.

U. S. GUTTA PERCHA PAINT COMPANY
20-I Dudley Street, Providence, Rhode Island

Barreled Sunlight *Paints*

In whitest white or clean, clear, pleasing colors, there's a Barreled Sunlight Paint for every job

It always costs more not to paint!

TUFFER Men Give You Practical Help

Practical help by TUFFER men has long been a policy of Howard Bros. Constantly we receive letters from customers expressing appreciation of the "over and above" service given by TUFFER men. They are qualified by specialized training and experience to give workable suggestions and recommendations.

FROM RECENT LETTERS: ➡

Talk over your carding problems with a Howard Bros. representative. Write today to our nearest plant or office.

"'. . . right off the bat you gave me an idea I had never heard of, one I can now appreciate from a practical angle. You know how to make good the claim in your advertising that your representatives are 'practical' men in time of need."

"Your representative told us things we had never heard of, much less thought about, which gave us immediate improvement in our production and quality."

"I'm not buying anything but Howard Bros. Tuffer Card Clothing, and that goes as long as they give the same quality and service."

HOWARD BROS. MFG. CO.
WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C. **Branches:** Philadelphia, Pa. and Blanco, Texas
Direct Representation in Canada A-3

TUFFER CARD CLOTHING **IMPROVES PRODUCTION ALL ALONG THE LINE**

DESIGNED FOR THE FEMININE MARKET

Who buys your packaged textiles? Women, overwhelmingly. And women are eye-buyers, attracted by style, color, design. Is your textile package created with this ultimate consumer in mind?

Let our Textile Packaging Laboratory show you what scientific package design can do for sales. We research consumer reactions at the point of sale—study your packaging and distributing methods, and your costs—and recommend the package most efficient for your needs and most attractive to the woman buyer. Container Corporation of America has a long, successful record of packages designed to sell on sight.

CONTAINER CORPORATION OF AMERICA

TEXTILE PACKAGING LABORATORY, PHILADELPHIA

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE

NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

lower maintenance expense in the card room

when the

GULF LUBRICATION ENGINEER

"is in the picture"

For lower maintenance and power costs in the card room—in every mill room—enlist the cooperative services of a Gulf Lubrication Engineer.

With a background of thorough training and broad practical experience, he can be of real assistance to you in improving your lubrication practice.

He will recommend the lubricants and application methods exactly suited to your equipment and operating conditions. Then, periodically, he will check the performance of each machine and suggest any changes in lubrication practice that are necessary to provide for new conditions.

This kind of lubrication service has a real dollar and cents value to you. Write, wire, or phone your nearest Gulf office today and ask the Gulf Lubrication Engineer to call.

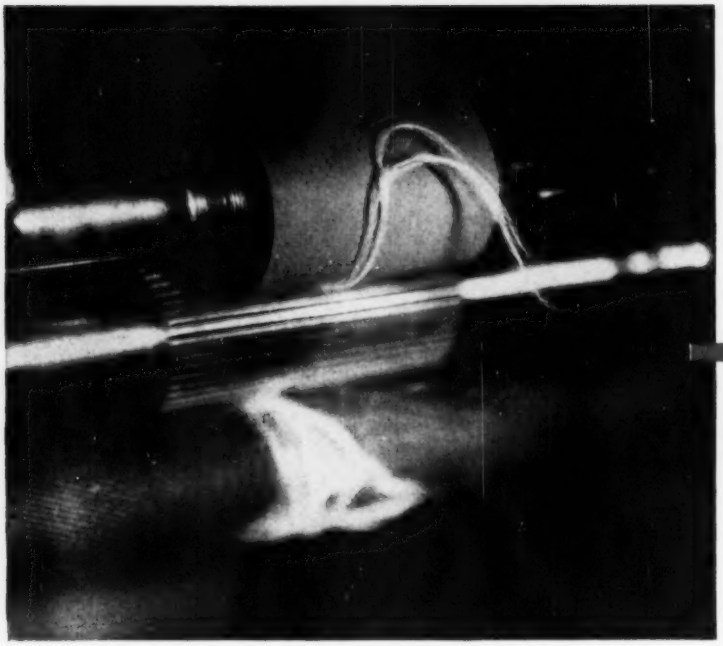
Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
New Orleans · Houston · Louisville · Toledo

Gulf makes available top quality passenger and truck tires — ask your Gulf representative

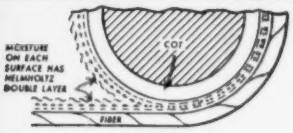
GULF INDUSTRIAL LUBRICATION



These action photos were taken at 1/250,000 second while cots were running 300 revolutions per minute.

LAPPING UP is caused by surface attraction between cot and fiber

THIS COT LAPS



Moisture layers of fiber and cot contain electric charges that attract fiber to cot. When pressed together, the combined moisture layers have the effect of adhering fibers to the cot and causing them to lap up.

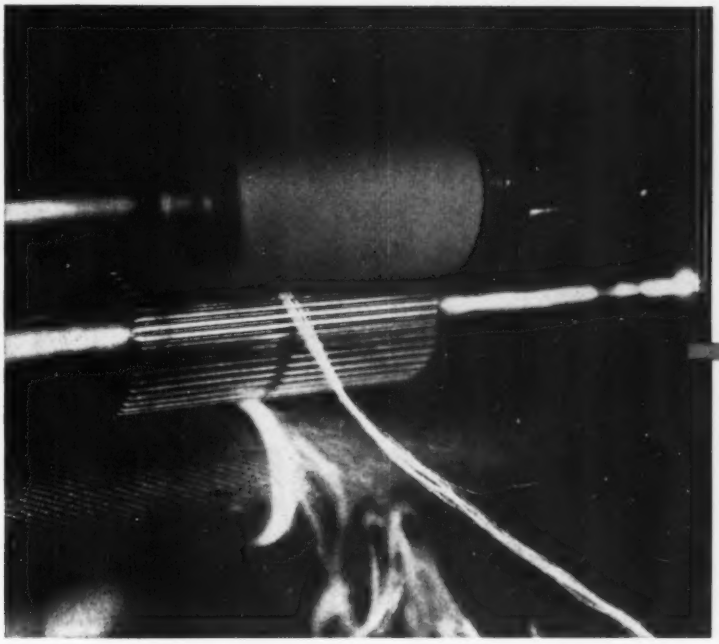
How J-490 Accotex

Armstrong's general-purpose roll covering . . . NC-727 Accotex

A cork-loaded synthetic rubber cot that combines the superior drafting properties of cork with the long life of rubber. Because of its cork content, NC-727 produces less eyebrowing than any other synthetic cot. It resists slicking and drafts a more uniform, stronger yarn.

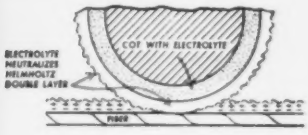
Whether you are spinning cotton, wool, or synthetic fibers, Armstrong can supply you with a cover specially formulated for the job. Your Armstrong representative will gladly arrange a test installation in your mill.

ACCOTEX COTS
CORK COTS



NO LAPPING occurs when cot covers contain certain electrolytes

THIS COT DOESN'T LAP



Electrolyte incorporated in patented J-490 Accotex® composition destroys electric charge in moisture layer of cot. Thus there is no attraction of fiber to cot and no tendency for the fiber to lap up.

Cots reduce lapping

Armstrong's J-490 Accotex Cots reduce lapping by eliminating its basic cause, the electrical attraction between roll covering and fiber.

Just how this is done with added electrolytes is described in the pictures and diagrams above. To practical mill men, this patented feature of Armstrong's J-490 Accotex Cots means that broken ends won't tend to adhere to the cot surface. Hence, top roll laps are virtually eliminated.

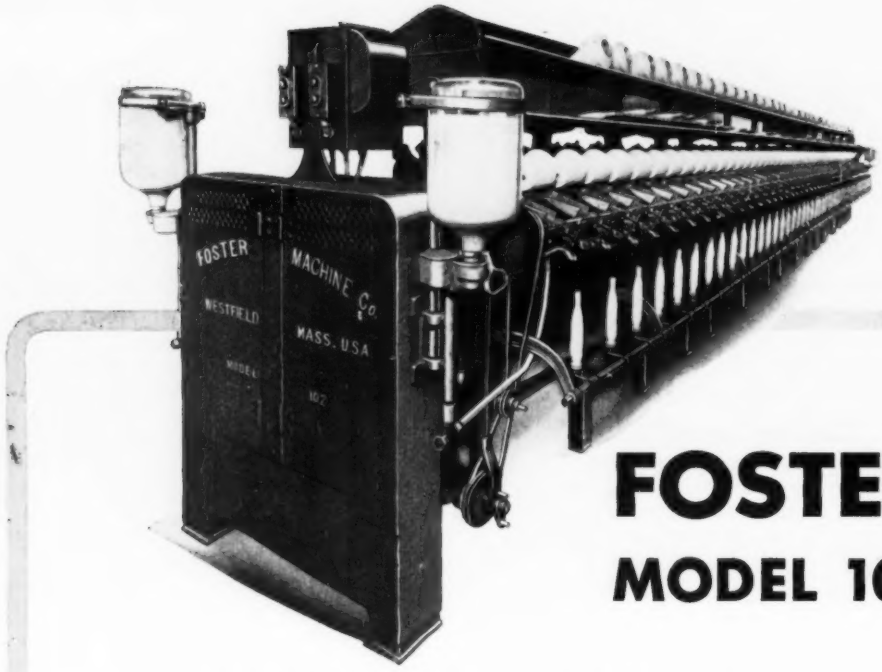
In addition, J-490 Accotex Cots are exceptionally durable. They'll give months of front-line service without perceptible wear. When the cot surface needs cleaning, it can be rebuffed for but a few cents per roll per buff. With most yarns, you can count on a total life of at least five to six years when you use J-490 Accotex Cots.

Temperature and humidity changes won't affect the specially developed synthetic used in J-490 Accotex. It won't sweat or flatten during normal shutdown periods.

When maximum eyebrow resistance is required, use J-490 Accotex Cots with revolving clearers.

See the remarkable performance of Armstrong's J-490 Accotex Cots on your own frames. Call your Armstrong representative to arrange for a test installation. Or write Armstrong Cork Co., Textile Products Dept., 8309 Arch St., Lancaster, Pa. Available for export.

ARMSTRONG'S ACCOTEX COTS



FOSTER
MODEL 102

It Can CHANGE with Your Winding Requirements

No one can foresee today what his winding requirements will be tomorrow. However, he CAN obtain winding equipment which is FLEXIBLE enough to CHANGE with winding requirements, — the FOSTER MODEL 102.

This machine will wind any type or count of staple yarn. It can be readily adjusted to produce any cone taper commonly used and any angle of wind from 9° to 18°. It can also be equipped to wind knitting cones, warping cones, parallel tubes, dye packages (⅝" or large diameter tubes), or short traverse cheeses (3¼" or 2¼" traverse). It will wind dyed yarn even when damp (no jumping out of guides), also conditioned yarn (the machine is frequently equipped with a conditioning attachment). Yarn traverses up to 7" can be supplied.

Users of the Foster Model 102 also gain in winding efficiency, for this machine will wind twice as much yarn, at 1 3 less cost, as will obsolete machines.

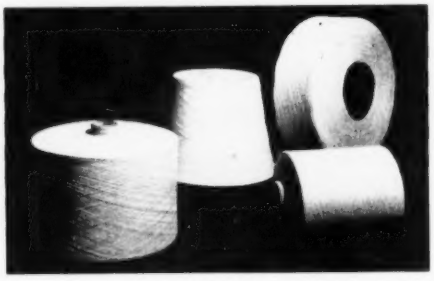
Bulletin A-95 on request

KNITTERS

Specify FOSTER - the ORIGINAL Open Wind Cone

By so doing you can also specify the taper, the angle of wind and the cone density which is best suited to your knitting requirements.

Modern slub catching attachment and other special devices on the Foster Model 102 assure a clean, uniformly high quality yarn and cones that are free of ribbon wind.

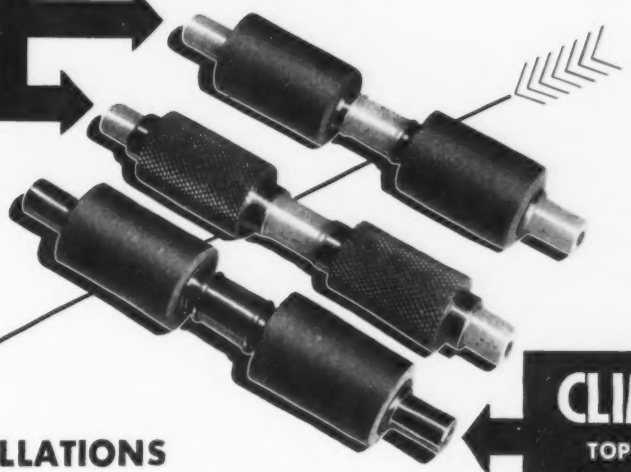


FOSTER MACHINE COMPANY
Westfield, Mass., U.S.A.

SOUTHERN OFFICE, JOHNSTON BLDG., CHARLOTTE, N. C.; CANADIAN REP., ROSS WHITEHEAD & CO., LTD., UNIVERSITY TOWER BLDG., 660 STE. CATHERINE ST., W., MONTREAL, QUE.

SINTEX
TOP ROLLS
FOR BACK & MIDDLE LINES
Solid with non-lubricating, practically wear-proof, renewable insert at all points of wear.

Proven by years of use



400 INSTALLATIONS
DURING 4 YEARS

CLIMAX
TOP ROLLS
FOR FRONT LINES
rugged, ball-bearing, long life lubricated, frictionless, lint-proof.

WHAT THEY DO

This combination of top rolls completely eliminates oiling in the drafting area. 100% saving on oil and oiling effort. 100% freedom from oil on your yarn and cots.

Reduces cleaning. Roll picking effort minimized, sometimes to intervals as long as several weeks apart. Practically no other cleaning.

Much better running work. Fewer ends down, improved break constant, improved deviation, improved yarn appearance.

WHAT USERS SAY

"20% reduction in cleaning, and COMPLETE ELIMINATION OF OILING EFFORT AND EXPENSE."

"Picking reduced from once a day to once every five days." — "A 50% saving in cost of front roll picking, while cleaning is cut to the absolute minimum."

"Former deviation of 1.75 cut to 1.33 (on 70/1/31s)." — Our improvement of 31.8% in ends break occurrence is enough in itself to justify the use of your rolls."

PAY FOR THEMSELVES OVER AND OVER IN DIRECT SAVINGS AND YIELD EXTRA DIVIDENDS IN QUALITY

MACHINECRAFT, INC.
21 VERNON STREET
WHITMAN, MASS.

Watson & Desmond **P. O. Box 1954** **Charlotte, N. C.**	John W. Littlefield P. O. Box 779 Greenville, S. C.	Davis E. Williams, Jr. Box 373 Griffin, Georgia	Richard V. McPhail 709 So. Jackson St. Gastonia, N. C.	W. F. Daboll P. O. Box 701 Greensboro, N. C.	**Richard K. Butler** **P. O. Box 428** **Whitman, Mass.**

MAIL THIS COUPON

MACHINECRAFT, INC., 21 Vernon St., Whitman, Mass.

Send ACTUAL RESULT DATA on Climax and Sintex Top rolls in mills running work similar to ours as noted below.

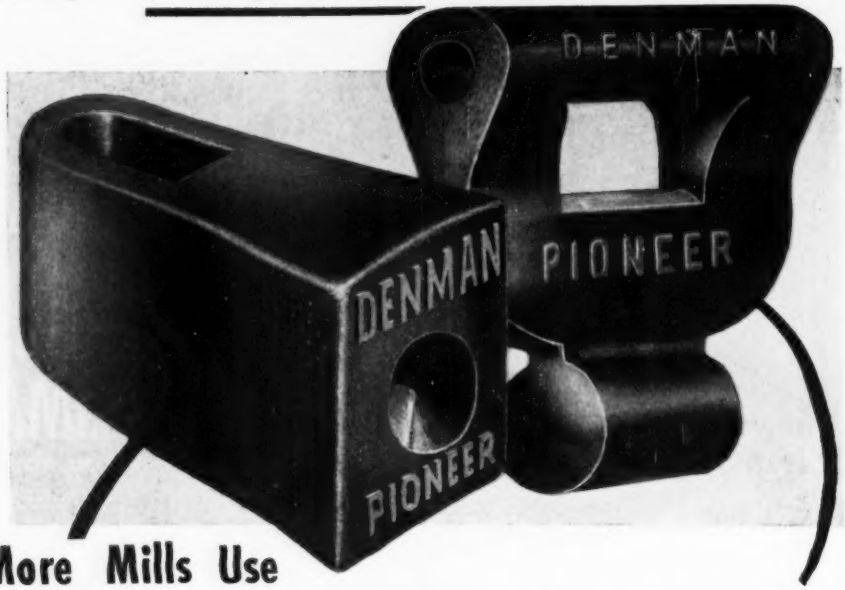
(TYPE OF DRAFTING SYSTEM) _____

(TYPE OF YARN) _____

MR. _____ POSITION _____

MILL _____ CITY _____

TWO PROVED METHODS of



More Mills Use
DENMAN PIONEER PICKERS
than any other make BECAUSE

1st — Denman and Terrell developed the rubberized fabric picker. We know this field—we keep up-to-date—we are the first to furnish the very latest and best improvements in pickers and other loom parts.

Mills get longer picker and shuttle life through the specialized service of Terrell field men who fit Denman Pioneer Pickers to your individual loom requirements.

2nd — Mill men know from experience that Denman loom parts provide

Lowest Cost Per Loom Per Year.

watch DENMAN for the best first

Made by DENMAN TIRE & RUBBER CO.
Exclusive Sales Representatives

The TERRELL MACHINE COMPANY, Inc.
CHARLOTTE, N. C.

REDUCING WEAVING COST!

The New Type L Bobbin Cleaning Machine
HAS EXCEEDED ALL EXPECTATIONS
in efficiency and economy

Users are extremely well pleased with the total production of the new Type L and the complete elimination of damage to quills. It removes waste mainly by jets of air and brushes . . . *neither quills nor the finish of quills can possibly be damaged.*

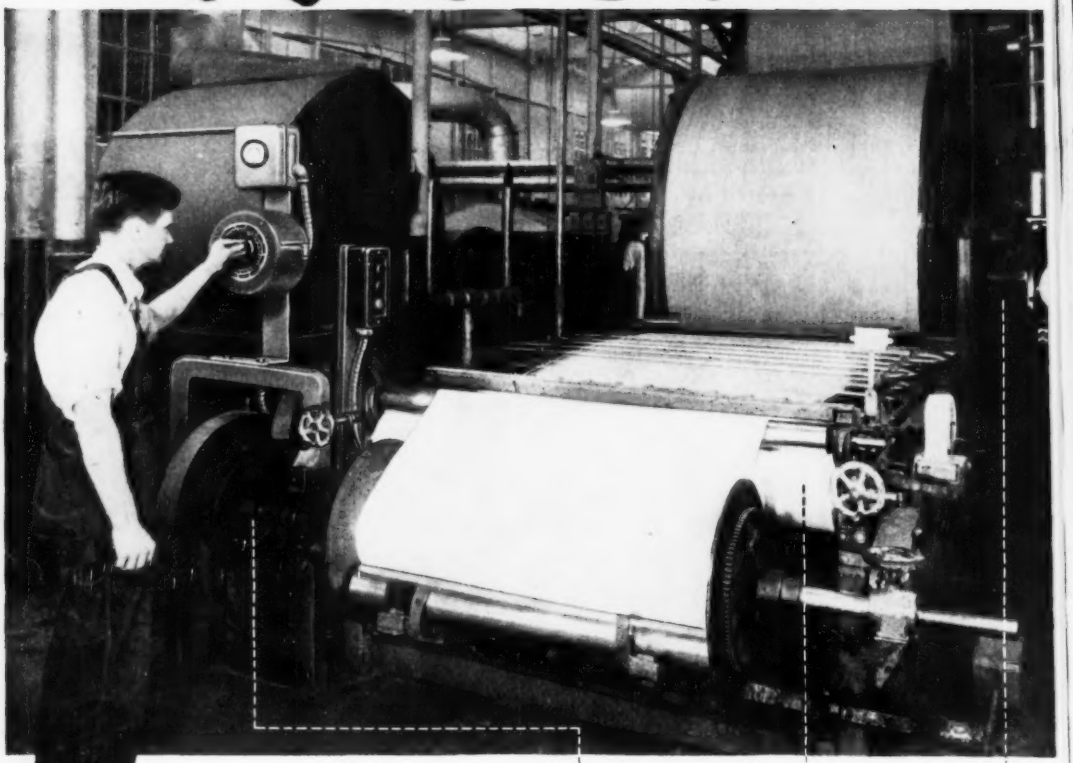
The new Type L is designed to handle a wide variety of quill designs and sizes . . . and to accommodate a wide range of yarns . . . including continuous filament, wool and worsted, and many counts of cotton and spun rayon.

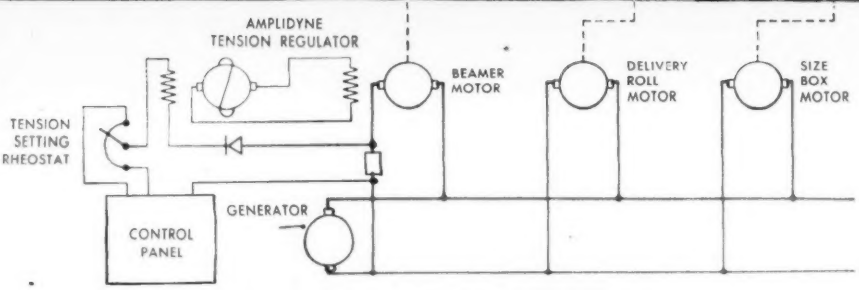
We also furnish conveyors and hoists for handling quills around our machines and moving them to another location in your plant. The RETURN CONVEYOR shown above is one more Terrell accomplishment to reduce handling costs and provide more efficient operation.

Our engineers are experts on bobbin cleaning and handling problems. They will be glad to help you eliminate cleaning problems and to reduce your cleaning and handling costs.

The TERRELL MACHINE COMPANY, *Inc.*
CHARLOTTE, N. C.

The PAY OFF is

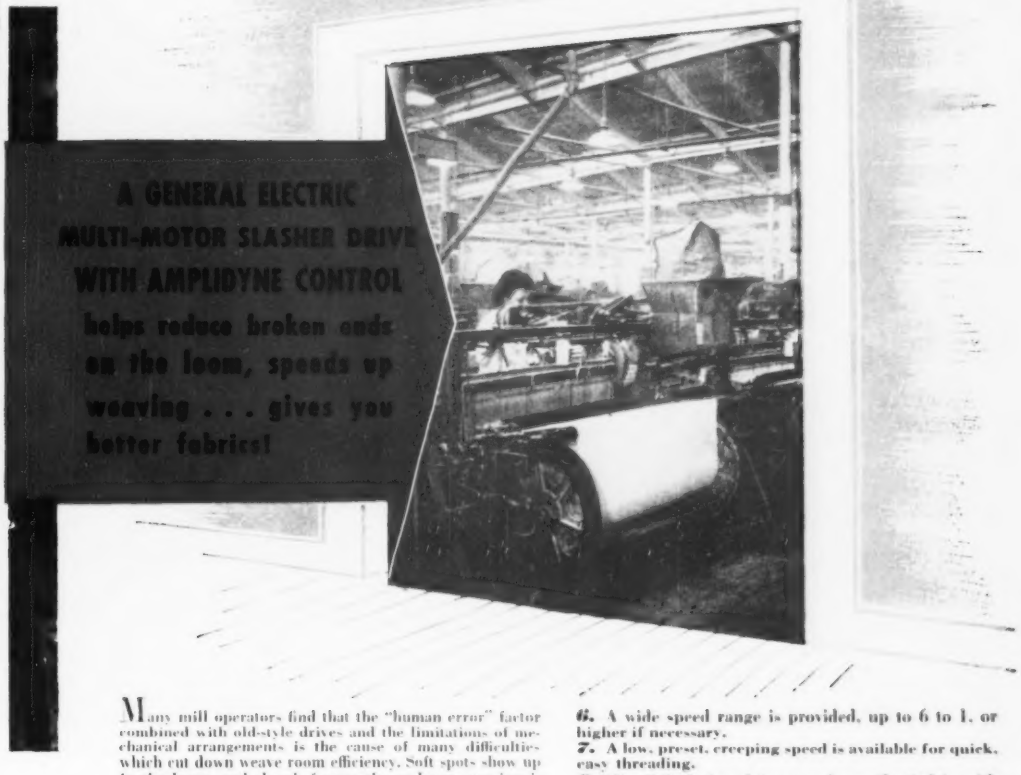




COMPONENTS OF A TYPICAL G-E SLASHER DRIVE

This simplified schematic shows the basic components of a typical G-E slasher drive with special emphasis on the beam motor and its control. As beam diameter builds up, the drive motor slows down automatically in order to keep yarn speed and yarn tension constant. This is accomplished by holding motor armature current constant during beam build up. Specific details on how this is done are contained in Bulletin GEA 5259. Write for your copy today!

...is in the weave room!


A GENERAL ELECTRIC
MULTI-MOTOR SLASHER DRIVE
WITH AMPLIDYNE CONTROL
helps reduce broken ends on the loom, speeds up weaving . . . gives you better fabrics!

Many mill operators find that the "human error" factor combined with old-style drives and the limitations of mechanical arrangements is the cause of many difficulties which cut down weave room efficiency. Soft spots show up in the beam, ends break frequently, and yarn tension is irregular.

A General Electric slasher drive reduces these imperfections. Specifically, it gives you these important operating advantages:

1. Tension is automatically regulated over the entire beam diameter build-up.

2. Any one of a wide range of preset tension values between the size box and delivery roll may be easily selected.

3. More yards per beam are made possible by uniform tension control.

4. Running speeds may be easily preset by adjusting a single rheostat.

5. Acceleration and deceleration is smooth and even to prevent tension variations or yarn damage.

6. A wide speed range is provided, up to 6 to 1, or higher if necessary.

7. A low, preset, creeping speed is available for quick, easy threading.

8. The G-E slasher drive may be easily tied in with automatic moisture control.

9. Maintenance of slip clutches, line shafts, and mechanical speed changers is eliminated.

If you are considering a new slasher installation, it will pay you to discuss a G-E drive with your machinery manufacturer. Or, if you're modernizing, get in touch with your local G-E textile mill specialist. For more details, write for Bulletin GEA-5259, *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

DRIVE SYSTEMS FOR TEXTILE MILLS

You can put your confidence in—

GENERAL ELECTRIC

654-5

When you wonder if you can really afford Stainless Steel

—ask yourself these questions

Can you afford the cost of slow, laborious cleaning that easy-to-clean Stainless makes unnecessary?

Can you afford the risk and loss of off-color runs that quickly vanish when non-contaminating Stainless Steel is used?

Can you afford to operate your equipment at slow speeds that keep production low, when your competition is running machines at the top speeds Stainless makes safe?

Can you go on inviting snagging and damage to yarns and delicate fabrics when permanently-smooth Stainless Steel will end this danger?

Can you afford equipment repairs and breakdowns that retard operations and increase your costs, when tough, strong, corrosion-resisting Stainless Steel will reduce them to a minimum?

In other words, can you afford to run your plant without taking advantage of the proved benefits that Stainless Steel assures? To be frank, we don't think so. Not if you want to produce better textiles, faster and economically.

That's why so much of today's high-speed, mechanized equipment is using Stainless Steel in greater quantities and in more places than ever before. And much of it is *U·S·S* Stainless Steel because there's no finer Stainless produced for textile mill application.

We'll be glad to show you how this service-tested *perfected* Stainless can be applied to your equipment—to increase its life, improve its performance, and reduce your costs. Just drop us a line.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO · CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

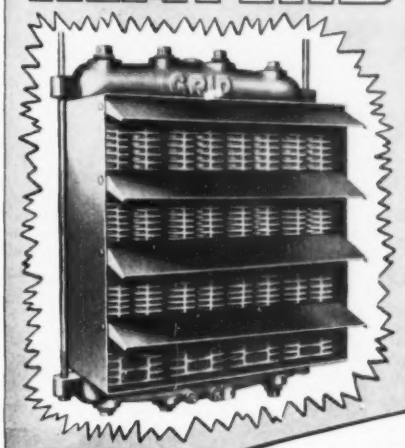
U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

9-527

UNITED STATES STEEL

GRID UNIT HEATERS



HIGH TEST ONE PIECE CONSTRUCTION CAST IRON HEATING SECTIONS

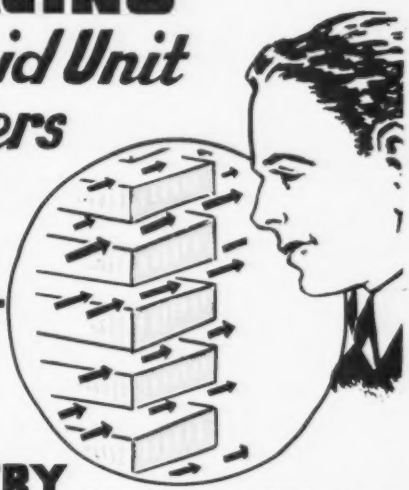
Gentlemen:
The first group of GRID Unit Heaters were installed in our plant in 1937. Our experience has been very satisfactory. The units perform efficiently and other than a small amount of attention to the motors, we have had no maintenance at all on them.

Yours very truly
A MIDWEST TEXTILE MILL

Write

today for the complete GRID story—CUH-849-TW, capacity tables and engineering data.

The WIDER FIN SPACING *in Grid Unit Heaters* MAKE THEM SUCCESSFUL IN YOUR INDUSTRY



It's the free area in GRID heating sections that prevents plugged up heating units. GRID condenser sections are made with wide "fins" properly spaced for maximum radiation yet far enough apart to prevent plugging up due to lint laden air. No staggered arrangements, but a straight, clear, passage from back to front. Air passes through freely without obstruction. This feature is standard construction with GRID. No special arrangement is needed. That's why several textile mills report GRID installations best for their service conditions.

GRID Unit Heaters are designed to save fuel cost too, because they provide heat where it is most needed—to the working zone. Careful selection of fans and motor speeds eliminates stratification of warm air at ceiling level . . . GRID Unit Heaters are designed for low outlet temperatures and greater air delivery to the floor line—**not the ceiling** . . . that's another reason why textile mills all over the country are using GRID Unit Heaters . . . they are heating their plants comfortably without maintenance or down time due to heating failures.

GRID "fin" heating sections are ONE piece construction high test cast iron—the metal for permanency . . . no electrolysis to cause corrosion, breakdowns, leaks or heating failures, because there are no dissimilar metals used in GRID construction. GRID Unit Heaters will safely withstand steam pressures up to 250 lbs. . . . GRID is maintenance-free, trouble-free heating service. Learn how you too can have successful unit heating service.

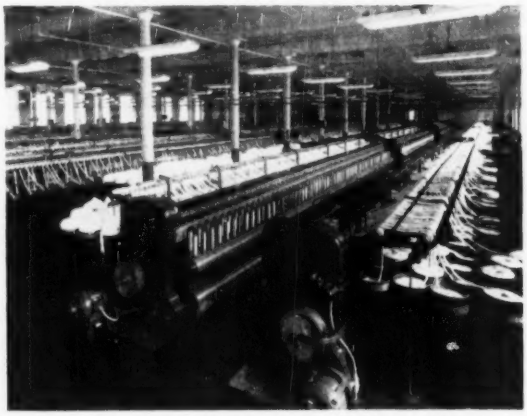
D. J. MURRAY MANUFACTURING CO. WAUSAU • WISCONSIN

"Those 24 new slubbers you built for our mills are certainly grand machines. We could not ask for better. They are turning out a beautiful product, and about all the attention they need is creeling, doffing, and cleaning. Ends down on them are nearly as scarce as hens' teeth. Everybody who has anything to do with them is delighted that we have them.

"The three new opening rooms you furnished and the nine single-process pickers you installed are likewise most satisfactory and doing excellent work. The picker laps are clean, firm, and very even and contain virtually no neps. It is all very excellent machinery.

"Rest assured that when we are again in the market for new machinery, we shall be only too glad to figure with you on it."

The quotation herewith is from a letter recently received from a well known New York firm, operating a group of southern mills. This company's experience indicates what YOU may expect if you modernize with H & B textile machinery.



TYPICAL INSTALLATION OF H & B HIGH-DRAFT SLUBBERS

H&B AMERICAN MACHINE CO.

Builders of Modern Textile Machinery

FACTORY, EXECUTIVE OFFICES AND EXPORT DEPARTMENT • PAWTUCKET, R. I., U. S. A.

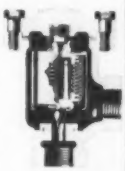
BRANCH OFFICES:—Atlanta, Ga.-815 Citizens & Southern National Bank Bldg.; Charlotte, N. C.-1201 Johnston Bldg.

How to be Right the first time

WHEN SELECTING STEAM TRAPS

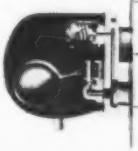
No single type of trap is suitable for all applications. But one of the four distinct Sarco types will be exactly right for any given application. Some provide quicker warm ups in the morning, some extract more of the heat, some are better for fluctuating condensate loads and others are better for out of doors. Sarco has the only plant devoted exclusively to complete lines of steam traps and temperature controls. To be sure, the first time, see Sarco first.

A THERMOSTATIC



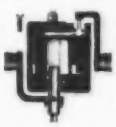
Wide open when cold for quick starts. Retains more of the heat before releasing condensate. Large valve orifice purges air quickly when starting. No seat changes when pressures change. Cannot freeze. Two types—for low pressure heating and high pressure industrial service up to 300 psi. Bulletin No. 250.

B FLOAT



Ball float allows continuous discharge without shock to temperature controls and other instruments. Automatic thermostatic by-pass takes care of air and gases without steam waste. All pressures up to 200 psi. Bulletin No. 450.

C BUCKET



Intermittent, but very rapid—can handle large volumes of condensate. Air goes out with the condensate. All parts attached to cover provide easy inspection. Straight-through connection makes installation easy. Integral strainer inside. Standard sizes to 250 psi. Forged steel types to 900 psi, and superheat. Bulletin No. 350.

D LIQUID EXPANSION

A low cost combination of trapping and approximate temperature control. Ideal for outdoor tanks and lines and other points where condensate cannot be returned. In other forms, used as combination trap and control for wash tanks, food equipment, etc. Catalog Nos. 250 and 550.

APPLICATION	1st CHOICE	2nd CHOICE
Process Tanks, small	A	C
Process Tanks, large	B	C
Dryers, Coil Type	B	A
Dryers, Fan Type	B	C
Drying Tumblers	B	A
Water Heaters	B	C
Preheaters, Fuel Oil	B	C
Rotating Cylinders	B	B
Slashers	B	B
Dry Cans	B	B
Flat Work Ironers	C	B
Presses, Laundry	C	A
Stocking Forms	C	A
Presses, Plastics	C	A
Presses, Platen	C	A
Evaporators	B	C
Steam Lines Outdoors, small	A	D

Ask for Bulletin No. 1600 "Selecting Steam Traps"

267

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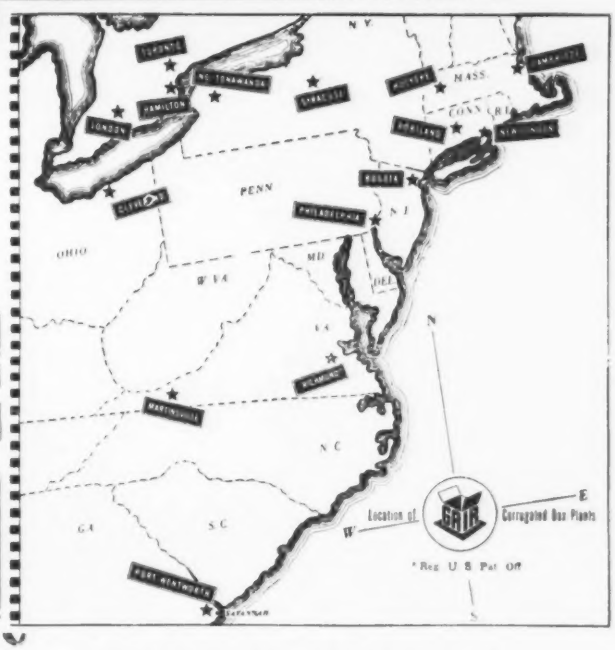

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AMCO – *specialists in humidifying and air-conditioning devices*

These devices as well as the complete humidification and cooling systems manufactured and installed by the American Moistening Company are the product of sixty years of cooperative research with the textile industry. All Amco equipment shares four important common characteristics . . . simplicity, practicality, capacity and basic economy . . . reasons why Amco equipment is preferred by textile mills.

AMCO AUTOMATIC SELF-CLEANING ATOMIZERS provide better spray without drip or feathering down. Automatically clean both air and water orifices. Assure trouble-free humidification. Over 500,000 now serving the textile industry.

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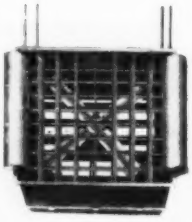
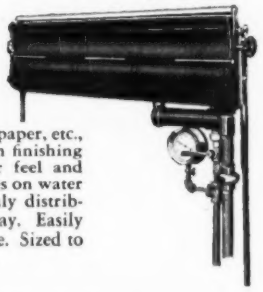
AMCO EVAPORATIVE COOLING UNIT—adaptable to existing humidifying systems and providing extreme flexibility. Promotes comfort and efficiency of workers by maximum cooling effect from evaporation. Introduces outside air into room in amounts regulated by climatic conditions and inside requirements. Amco Evaporative Cooling maintains the relative humidity best suited to the fibres and processes.



Amco Atomizers and Cooling Units in A Spinning Area.

AMCO AMTEX HUMIDIFIER. A self-contained unit designed for small areas, such as laboratories, where exacting conditions are to be maintained. No compressed air required.



AMCO DAMPENER, for textiles, leather, paper, etc., to apply moisture in finishing processes for better feel and appearance. Operates on water pressure, gives evenly distributed atomized spray. Easily regulated, adjustable. Sized to your requirements.

AMCO ELECTRO PSYCHROMETERS. An electrically driven fan draws air over wet and dry thermometer bulbs to provide extra accuracy of readings where space does not permit use of sling psychrometer.

AMCO SLING PSYCHROMETER in protective casing. A convenient size for mill use. Thermometers are carefully calibrated and have magnifying type tubes for easy reading.

Write for complete description of any of these AMCO devices or AMCO humidification and cooling systems.

AMCO

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the fiber for upholstery —*that welcomes heavy traffic*

Upholstery woven of saran is the natural choice for public seating applications—where good looks must be combined with superior durability and low maintenance costs. Saran monofilaments are *tough*—resist dirt, stains, abrasion and hard wear! They're *beautiful*—decorator colors are molded into the fiber! They're *care-free*—retain their brilliant newness with a minimum of care! And as fine as .005″, they're clean, lint-free—a pleasure to work and to weave! Versatile saran monofilaments offer limitless inspiration to the textile field.

THE *national plastic products company*

Manufacturers of Saran filaments, Nevamar High-pressure Laminates and Wyneme Molded Products.

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SARAN

SARAN BY NATIONAL *denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Dow's saran, and supplied to mills, weavers and other fabricators.*

Laurel Boil-Off Oils and Compounds for more effective degumming of pure silk, rayon and cotton mixtures.

Laurel Emulsions and Softeners for better quality, better knitability, proper conditioning, proper regain.

Laurel Hosiery Finishes for softer, smoother appearance, greater freedom from snags, more wear.

Laurel Nylon Finishes for speedier processing, improved hosiery quality.

Laurel Olamine, cation active softener for exceptionally soft finish on dyed rayons.

Laurel Rayon Oils for faster, softer yarns, improved appearance and hand of your rayon.

Laurel Ruxite Coning Oils for superior lubrication, greater pliability, fewer breaks, higher winding efficiency.

Laurel Rayon Size for smoother, stronger, cleaner, more resilient rayon warps.

Laurel Textile Oil, a favorite of hundreds of customers because of its unusual versatility for improved quality and finish of fiber and fabric.

Laurel Wool Oils for maximum lubrication.

Laurel Wool Scouring Compounds for speedier detergent action, clearer, more even dyeings, cleaner, softer, loftier wool.

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Yes, no matter what fiber or combination of fibers you are using, you will find there's a Laurel Product that will give you exactly the finish you desire.

For over thirty-nine years Laurel has been meeting successfully myriad challenges of leading dyers, bleachers and finishers. From this reservoir of experience and service has come the long line of Laurel processing agents to give you better, more efficient processing for every dollar you spend.

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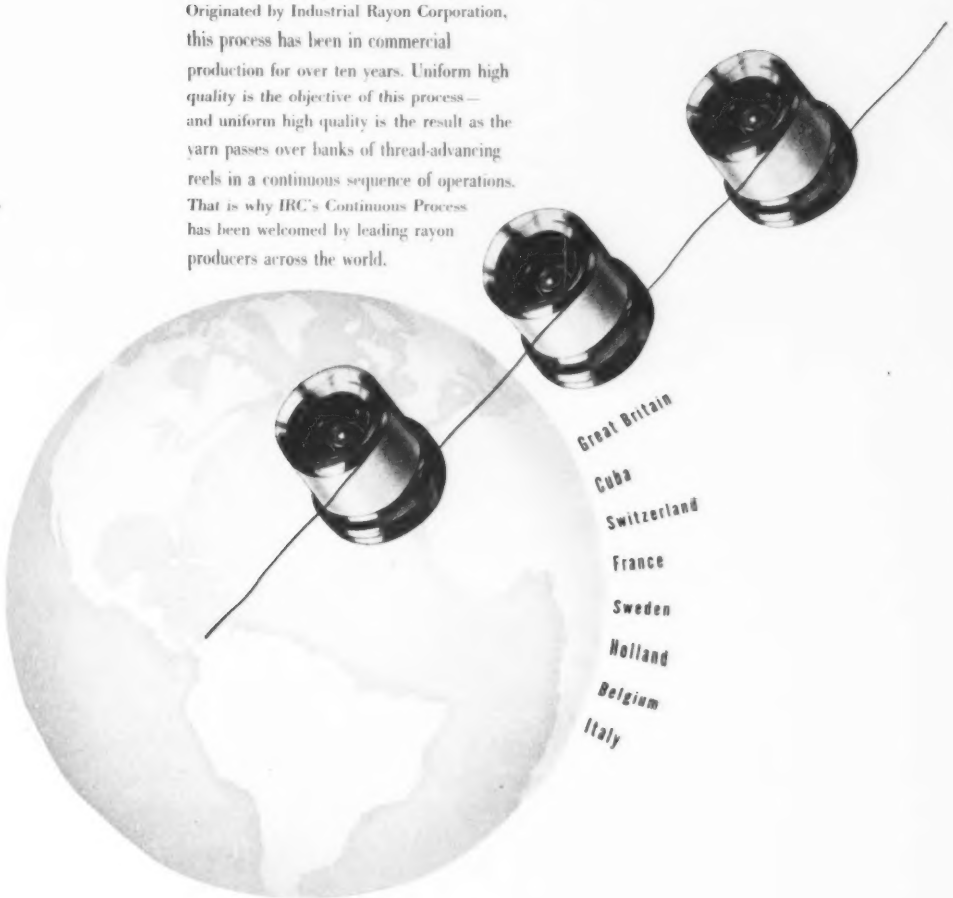
Industrial Rayon's Continuous Process is the most outstanding method yet developed for producing and processing rayon yarn. Originated by Industrial Rayon Corporation, this process has been in commercial production for over ten years. Uniform high quality is the objective of this process — and uniform high quality is the result as the yarn passes over banks of thread-advancing reels in a continuous sequence of operations. That is why IRC's Continuous Process has been welcomed by leading rayon producers across the world.



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Makers of ®Spun-lo • ®Tyron rayon yarn, cord and fabric

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The more efficient way to clean Wool Fibers

- ***Lower cost***
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The Perkins Wool Fiber Conditioner provides the solution to economical burr-removal by means of a new, simple and highly effective action that reduces substantially the cost of mill production. Its efficiency enables manufacturers to take advantage of the use of burry wool stock and still produce a comparable product . . . and, in the case of higher grade fibers, lessens the necessity for costly, time-consuming carbonization.

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PIN DRAFTERS
NOW AVAILABLE
IN TWO TYPES

DUAL DELIVERY—for better pin control on yarns prior to roving.

QUAD DELIVERY—(illustrated) used wherever entering weight of sliver for each delivery is 400 grains per yard or less. In most instances this represents third operation pin drafting, enabling the user to handle production of two dual delivery machines.

Here's Proof

You can do it better—faster—and for less with a

Warner & Swasey Pin Drafter

TRADE MARK

CASE 1 One of the country's largest worsted mills in the midwest tried out a Warner & Swasey Pin Drafter. They quickly added 11 more. Results are so satisfactory they now have 57 Pin Drafters, replacing all of their heavy Bradford drawing equipment.

CASE 2 A mill in Pennsylvania tried out one Warner & Swasey Pin Drafter. They quickly ordered 2 more. Their third order was for 15.

CASE 3 Another plant just recently tried one Warner & Swasey to learn advantages—they are installing 40 more.

If you would like to learn how a Pin Drafter, which represents a tremendous advance in drafting operations, fits into your production—a letter will bring the answer. We only hope to interest you in a test—the machine will multiply itself in your factory.

Our Field Engineer in your territory is experienced and can give you complete information.

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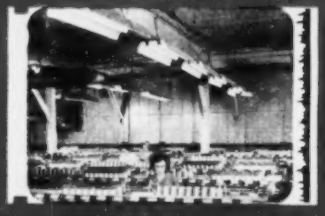
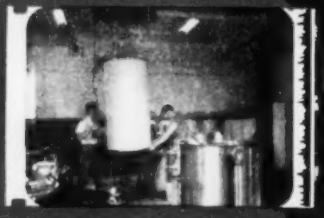
Dramatically— it presents the latest facts on these vital topics!



Mill Modernization
. . . lighting, air conditioning, better acoustics, better use of color, etc.

Finer Quality Control
. . . how it is being obtained in leading mills of every type.

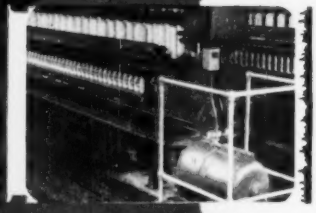
Power at the Point of Use
. . . individual electric drives for a wide range of machines.



Materials Handling
. . . and the ways in which it can cut your manufacturing costs.

it's authentic!

Filmed under actual operating conditions in mills like yours!



Higher Controlled Speeds
. . . as a way to increase the productivity of your machines.

Modern Power Distribution
. . . and the part it plays in cutting over-all production costs.

Continuous Processing
. . . two machines or twenty in one efficient, cost-cutting range.

New Processing Methods
. . . and their importance in opening new textile markets.

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A new, full-color sound movie on

Textile Mill Modernization

PACKED WITH QUALITY-IMPROVING, COST-CUTTING IDEAS!

With material and labor costs up and competition tougher, you don't want to miss a single opportunity to cut your manufacturing costs and improve the quality of your product. That's why we know you'll want to see "Textiles Unlimited." General Electric's new full-color sound movie on how textile mills are modernizing.

Practically every phase of modernization is covered in this dramatic, yet highly factual presentation. Lighting, air conditioning, power distribution, machine drives, quality control—these are only a few of the pertinent subjects treated. What's more, the ideas shown *in action* are practical—this film was made in mills located in every important textile area.

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Mail the coupon below to let us know you would like to see "Textiles Unlimited." We'll also send you a FREE copy of "How Textile Mills Are Modernizing," a 100-page illustrated reference manual for textile mill modernization. (Additional copies at cost—$1.25)

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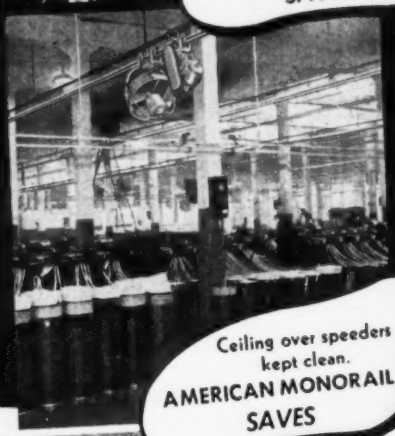
To Reduce Cost of *Cleaning* MONITORS and CEILINGS

Use AMERICAN MONORAIL Automatic Cleaning Systems



Ceiling over speeders kept clean. AMERICAN MONORAIL SAVES

Cleans ceilings over drawing frames. AMERICAN MONORAIL SAVES

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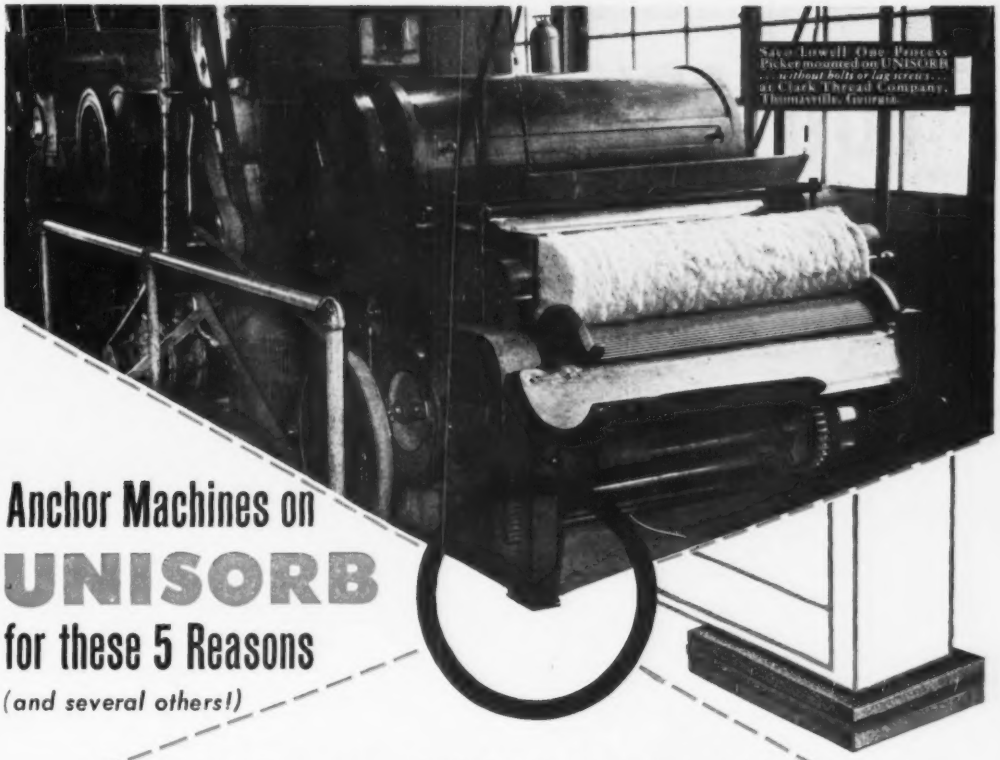
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. . . without bolts or lag screws . . .
at Clark Thread Company,
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Anchor Machines on UNISORB for these 5 Reasons

(and several others!)

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Gentlemen:
Please send my free copy of "Why It Pays to Anchor Your Textile Machinery with UNISORB."

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YOU ASKED FOR IT...

with letters, phone calls and requests to our field engineers

Here's the

ElectroniK Moist-O-Graph

Textile men from every point of the compass have been demanding this new, improved Moist-O-Graph . . . incorporating the famous *ElectroniK* Potentiometer in circular chart form. And here it is . . . combining pace-setting performance with a price that reaches a new low.

The *ElectroniK* Moist-O-Graph provides the means for producing consistent regain, higher slasher output and increased weave room efficiency . . . all so very important in the search for lower operating costs.

This is the news you have been waiting for . . . call in your local Honeywell engineer for further information about this new, lower-cost Moist-O-Graph!

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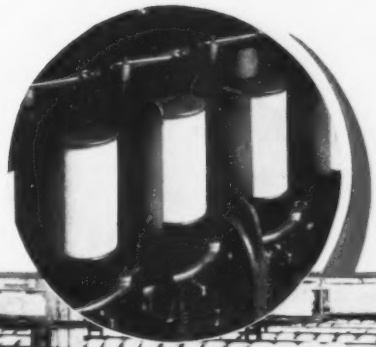
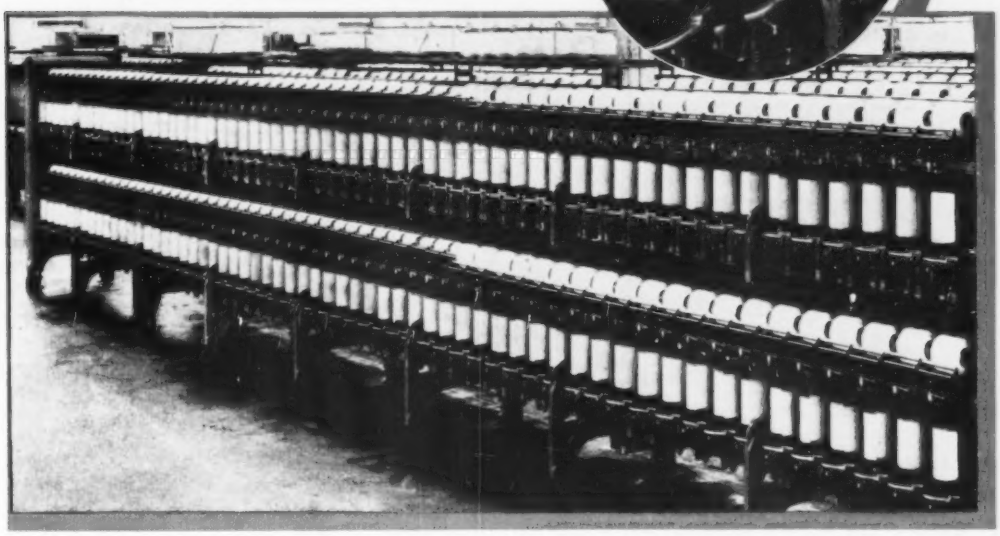
Marquette ROLLER BEARING SPINDLES

with FULL-FLOATING FOOTSTEP BEARING

For Cotton, Rayon, Nylon, Wool, Worsted





34,000 Marquette Roller Bearing Spindles in this nylon throwing mill replaced 41,500 plain bearing spindles—with no increase in power consumption. Package size was increased from 4 oz. to 12 oz., and speed was increased from 12,000 to 14,000 r.p.m. Result: *More yarn at lower cost.*

Modernize your old frames with Marquette Roller Bearing Spindles, or specify them on new frames. They operate efficiently at high speeds with large packages, and require less power. For a test installation, contact our home office or one of our representatives.

The Marquette

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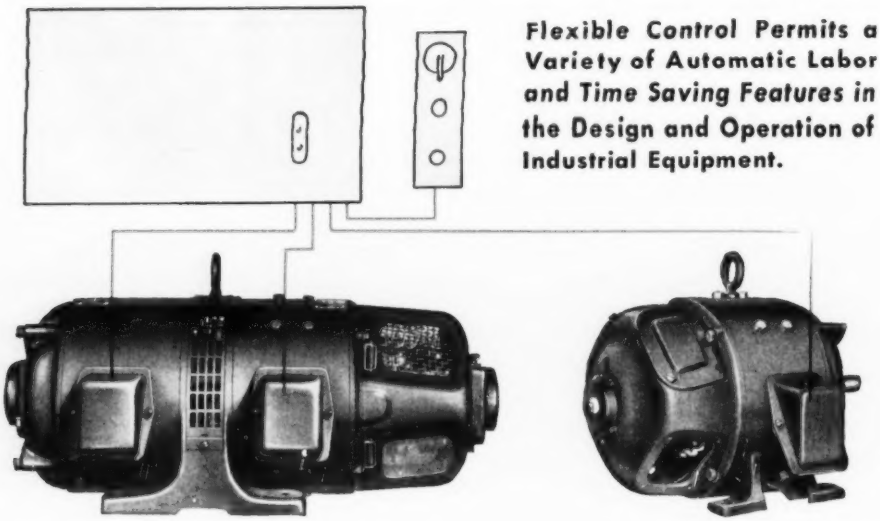
WINDSHIELD WIPERS FOR AIRCRAFT, TRUCKS AND BUSSES • PRECISION PARTS AND ASSEMBLIES

Century SELECTIVE SPEED Drives

For Operation From Alternating Current to Save Time and Labor

Flexible Control Over a Wide Range of Stable Production Speeds



Flexible Control Permits a Variety of Automatic Labor and Time Saving Features in the Design and Operation of Industrial Equipment.

All or any combination of the following features may be specified with Century SELECTIVE SPEED Drives

1. **WIDE RANGE AND SPEED VARIATION** — 8 to 1 ratio is a standard — 16 to 1 or 32 to 1 is available.
2. **PRACTICALLY STEPLESS CONTROL** — Smooth acceleration and deceleration for any character of load.
3. **STABLE SPEEDS** — Even with varying loads.
4. **JOGGING CONTROL** — Jogging at preset speed is always available.
5. **PRESET SPEED CONTROL** — Automatically accelerates to speed preset by the control.
6. **DYNAMIC BRAKING** — For quick, automatic stopping or where controlled deceleration of load is required.
7. **REVERSING OPERATION** — Jog in reverse, or run in reverse, or both as specified.
8. **MULTIPLE DRIVING UNITS** — With related speeds controlled from a single control.
9. **CONTROL LOCATION** — "Start" — "Stop" — "Jog" — "Reverse" or change in speed may be controlled from any number of locations.
10. **TYPES OF REMOTE CONTROL** — Variety of control accessories may be incorporated into the functional design of your equipment to provide automatic time and labor-saving features.

Century SELECTIVE SPEED Drives are manufactured in sizes from 1 to 125 horsepower.

Call a Century motor specialist who will help you analyze your motor application problems.

Century manufactures a complete line of alternating current, single and polyphase and direct current motors and generators, 1/6 to 400 horsepower — 500 Watts to 300 KW. Popular types and standard ratings are generally available from factory and branch office stocks.

Century C MOTORS

-814

CENTURY ELECTRIC COMPANY • 1806 Pine Street, Saint Louis 3, Missouri

Offices and Stock Points in Principal Cities

C&K C-LOOMS

help to pack most of your Summer Wardrobe!

ON SPUN RAYONS for the general run of summer clothing, there's no loom like a C-Loom. *See what you get:*

You get either a wide loom with Knowles Head Motion, or a narrow loom with dobby, as you prefer. You get quick and easy 2-way convertibility to operate either as a 4 x 1 box automatic bobbin-changing loom, or as a 4 x 4 non-automatic. You get C & K's all-purpose take-up with 4 choices of threading . . . as well as full automatic let-off, and a new feeler mechanism for 4 x 4 looms which tells weaver when bobbins are becoming depleted.

And that's not all. You get a wide choice of bobbin and shuttle sizes . . . from $7\frac{3}{8}$" to $10\frac{1}{8}$", with wound diameter up to $15\frac{5}{8}$".

There are many looms in C & K's wide-ranging C-family . . . for all types of fibres . . . cotton, spun rayon, blends . . . for handkerchiefs, dress goods, shirtings, marquisettes, terrys, huck, upholsteries, part-wool and all-wool blankets. And this unmatched versatility is your top protection in a competitive market that shifts suddenly from one specialty to another. See what C-Looms can do for *your profit-picture*. Write for the whole story.

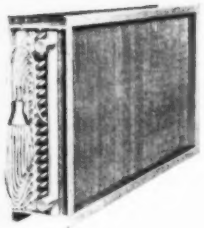
Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS

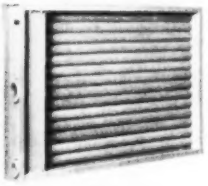
PHILADELPHIA, PA. · CHARLOTTE, N. C. · ALLENTOWN, PA. · CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

A COMPLETE STANDARDIZED LINE OF STURTEVANT COILS -- SECOND TO NONE!



Direct Expansion •
Type EA • For Freon—12



Heavy Duty Heaters •
Design 2 • For Steam

OUTSTANDING!

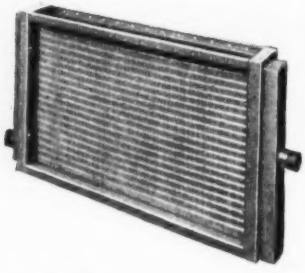
Completely redesigned and standardized—to dovetail with your most exacting requirements in coil construction and performance.

FEATURING

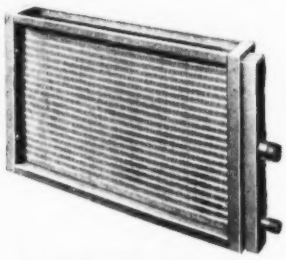
Cooling coils with copper headers and tubes . . . plate-type aluminum fins, aluminum casings and bolts. Copper fins and brass casings optional. *A complete non-ferrous assembly.*

Heating coils with copper tubes and plate-type aluminum fins, steel headers and casings. Copper fins optional.

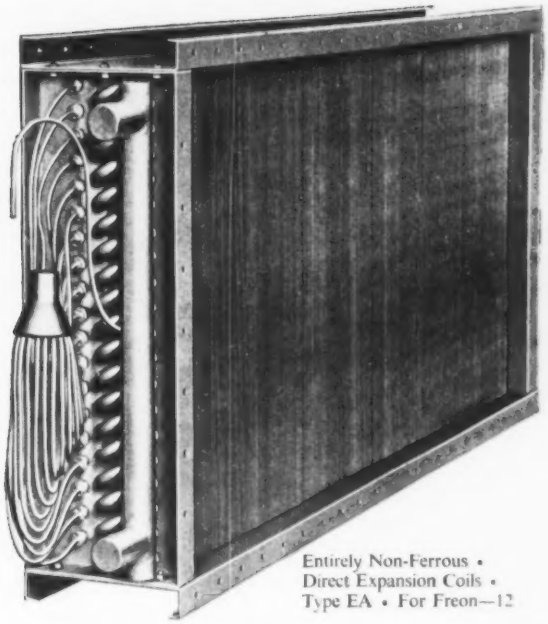
Everything that puts air to work for Every application



Blast Heating •
Type HBA • For Steam



Heating • Steam Distributing Tube • Type HDA

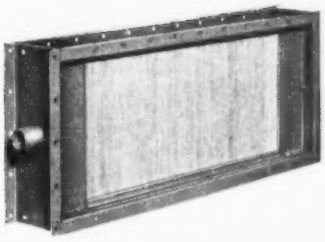


Entirely Non-Ferrous • Direct Expansion Coils • Type EA • For Freon—12

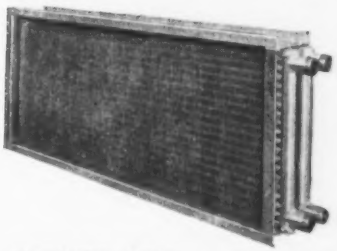
New, advanced tooling and properly trained workmen assure product quality, evenly spaced and uncrumpled fins, ease of cleaning and low maintenance . . . long life at rated performance.

Now *you can be sure* you'll install a quality product of proven performance—better suited to the job—by specifying Sturtevant. Call your nearest Sturtevant office, or, write Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Mass.

Westinghouse
Sturtevant Division



Zone Heating • Type HZA • For Steam



Water Cooling • Continuous Tube • Type WA

J-80149

Built To Your Specifications By

EX-CELL-O

... a great name in the precision machine tool field!

Ex-Cell-O has been making precision parts to customers' specifications for close to 30 years. Today, these Ex-Cell-O products include parts for the textile industry . . . from spindles and various small parts to large assemblies. Ex-Cell-O has the facilities—machines, heat treat, assembly, and inspection—to produce your precision parts economically, in small or large volume, and in accordance with your delivery schedule. For a quotation, send a part blueprint to Ex-Cell-O Corporation in Detroit today.

Bulletin No. 26181 describes Ex-Cell-O's textile products. Write now for your free copy.

EX-CELL-O CORPORATION DETROIT 32

XLO

Learn these Definitions

rayon

A textile fiber made of *regenerated cellulose.* (Example: viscose.)

estron

A textile fiber made of an *ester of cellulose.* (Example: cellulose acetate.)

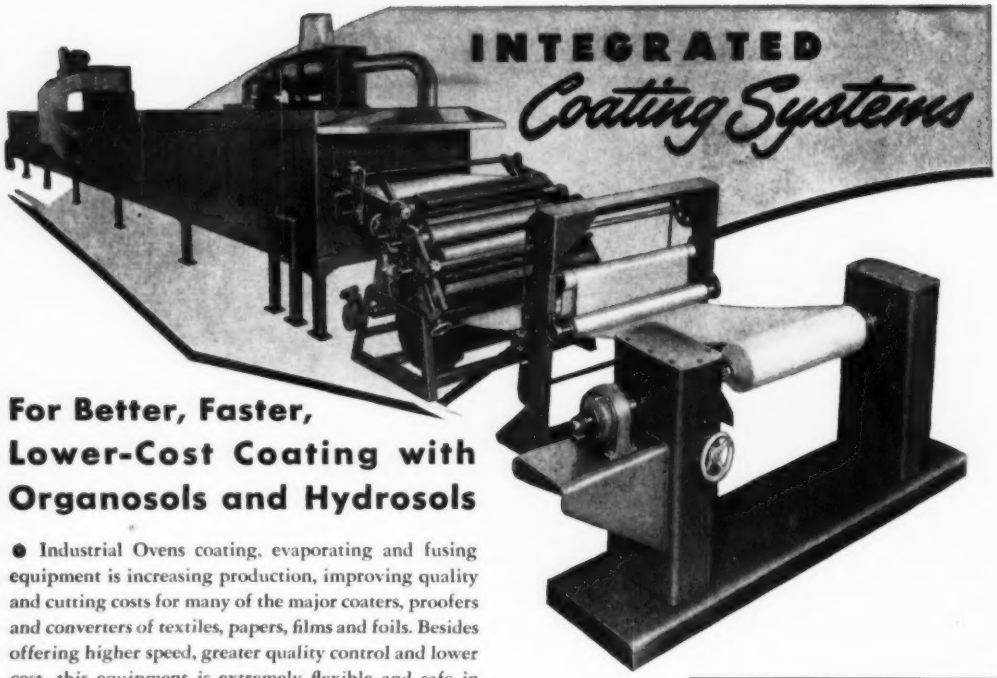
● These separate and distinct names for the two major types of man-made fibers are recommended by the Committee on Textiles of the American Society for Testing Materials, the membership of which includes many leading manufacturers, distributors, and users of textile products.

Tennessee Eastman will follow the ASTM recommendation and identify its cellulose acetate fibers as *estron*, not rayon.

Tennessee
Eastman
Corporation

SUBSIDIARY OF EASTMAN KODAK COMPANY

KINGSPORT, TENNESSEE



For Better, Faster, Lower-Cost Coating with Organosols and Hydrosols

● Industrial Ovens coating, evaporating and fusing equipment is increasing production, improving quality and cutting costs for many of the major coaters, proofers and converters of textiles, papers, films and foils. Besides offering higher speed, greater quality control and lower cost, this equipment is extremely flexible and safe in its operation.

The unit shown embodies many design and operating features seldom, if ever, found in ordinary coating equipment. These features result in higher production speed of goods, lower operator-attendant requirements and more accurate control of coating thickness.

Proper attention to safety factors and solvent loads assures trouble-free operation on even the most volatile solvents, with complete safety and dependability of evaporators and fusers in either continuous or non-continuous operation.

Because of sound engineering and advanced design, IOI systems for organosols give the operator many advantages, including the following:

1. True constant tension and velocity control of web through use of a synchronized system drive.

2. Flexibility of coating method through IOI combination coaters for roller or knife coating.

3. Close uniformity of evaporator temperature because of IOI high velocity jet system.

4. High coating speeds because of proper explosive vapor concentration control in evaporator.

5. IOI unified responsibility for the entire installation.

If your production involves the coating of textiles, papers, films or foils with any type of coating material, it will pay you to consult with IOI.

Write for "Blueprint for Industry, Part V — Coating and Handling Equipment for Textiles, Papers, Films and Foils"

IOI EQUIPMENT FOR THE TEXTILE INDUSTRY

- Fabric Coaters and Systems
- High-Speed Convection Slashers
- Loop and Festoon Driers
- Impregnating Systems
- Cake and Skein Driers
- Constant Tension Wind-ups and Unwind Machines
- System Drives

INDUSTRIAL OVENS, INC.

IOI ENGINEERING VERSATILITY

13825 TRISKETT ROAD CLEVELAND 11, OHIO

Mother knows best

about what to look for when buying anklets, and daughter soon learns that good knitting is one of the basic qualities. For good knitting means correct fit, comfort and long-wear. Leading knitting mills throughout the world rely on Torrington Needles to safeguard the quality of their knitting.

Torrington Needles, made by specially developed precision methods, assure smoother finish, finer temper and greater accuracy in over-all dimensions.

Let them help you produce top-quality knitting at lower costs.

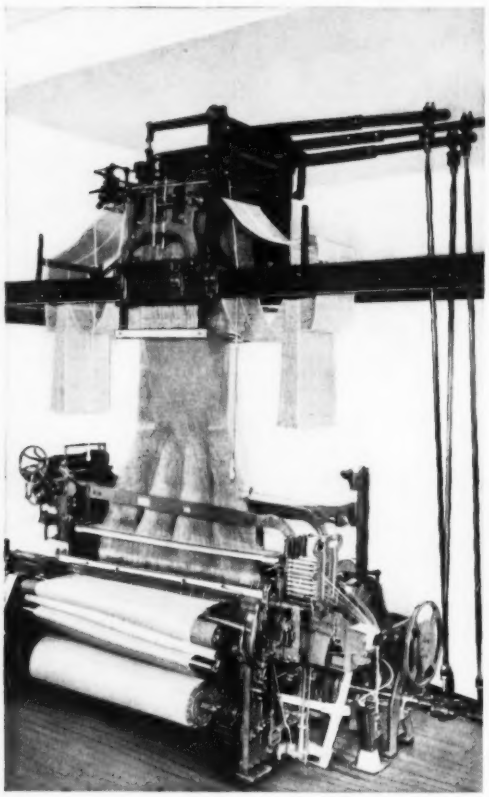
THE TORRINGTON COMPANY

TORRINGTON, CONN., U. S. A. *Established 1866*

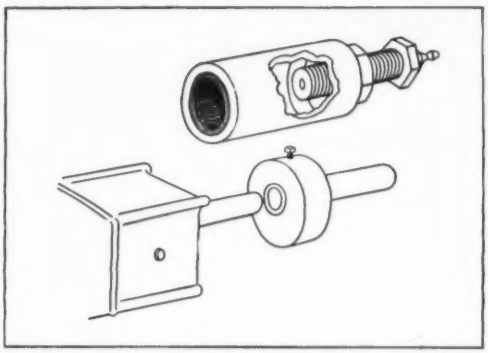
Branches: New York • Philadelphia • Chicago
Greensboro, N. C. • Boston • St. Louis • Toronto, Canada
Pacific Coast Representative: E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, California. In England: Broadgate House, 7-10 Eldon Street, London E. C. 2.

There's a TORRINGTON Needle for every type of Knitting!

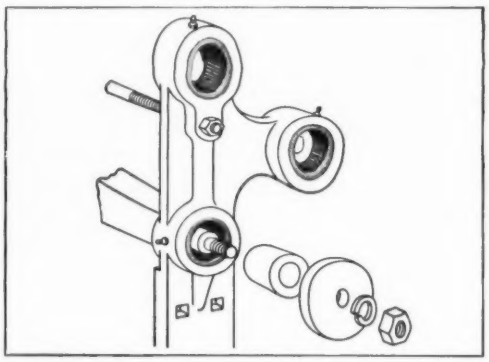
Torrington Needle Bearings Insure Accurate Pattern Control in Crompton & Knowles Jacquards



Crompton & Knowles Jacquards make possible high speed weaving of intricately patterned fabrics. They manipulate as many as 14,000 warp ends at a rate as high as 150 times a minute. Pattern is controlled by punched cards passing over a four-sided wood cylinder, designed with a series of holes 0.192" apart.



To produce perfect patterns in the fabric, accurate cylinder alignment is insured by the use of Torrington Needle Bearings as sketched above. Needle Bearings provide smooth, anti-friction operation, eliminating wear at the cylinder gudgeons.



Torrington Needle Bearings are also used in the lifting and cylinder levers. Loads are heavy. Needle Bearings provide a large area of contact surface for tremendous radial capacity. Lubrication and maintenance are greatly reduced, since the turned-in lips of the shell conserve lubricant and keep out lint and fly.

Your textile equipment, too, can benefit from the efficient operation, effective lubrication, and long service life of Torrington Needle Bearings. Our engineers will gladly help you adapt these compact anti-friction units to your designs. Write us today. THE TORRINGTON COMPANY, Torrington, Conn., or South Bend 21, Ind. District offices and distributors in principal cities of the United States and Canada.

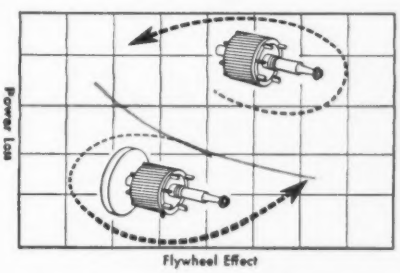
TORRINGTON *NEEDLE* **BEARINGS**

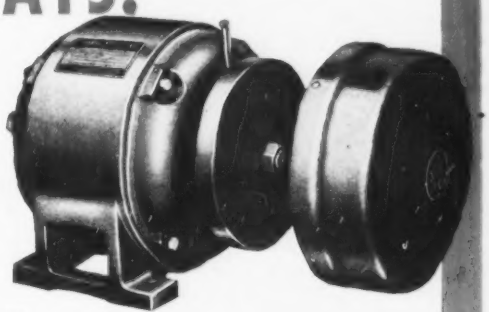
Needle • Spherical Roller • Tapered Roller

Straight Roller • Ball • Needle Rollers

the new G-E flywheel loom motor

cuts loom operating costs 4 WAYS!



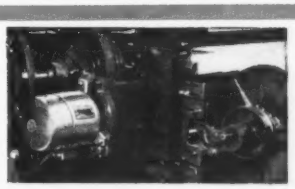


1. **IT CUTS YOUR POWER COSTS!**

Where a study indicates the need for a motor with additional flywheel effect, a *standard* General Electric loom motor with a flywheel integrally mounted will give you worthwhile power savings. As the chart shows, it reduces the peaks and valleys of the motor input, thereby cutting power losses.

2. **IT CUTS THE SIZE OF MOTOR YOU NEED!**

Often, a flywheel permits the use of a motor one size smaller than would be possible with a conventional loom motor. On the other hand, increased loom speed can be obtained without using a motor of greater horsepower.



3. **IT PERMITS INCREASED PRODUCTION**

With a flywheel on its shaft, a 1200 rpm motor may deliver performance equivalent to that of an 1800 rpm motor. This allows changing loom speeds in smaller increments and the use of stronger pinions—both well-recognized benefits.

4. **. . . and IT ACTUALLY IMPROVES LOOM PERFORMANCE.**

In mills where General Electric flywheel loom motors have been installed, reports indicate that a flywheel loom motor improves loom performance—loom fixers like the better "feel."

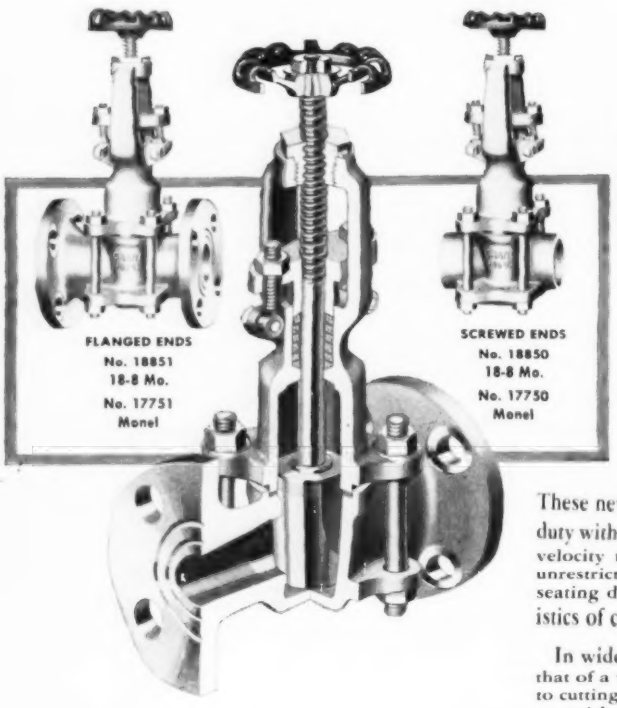
Ask your G-E sales engineer and your loom manufacturer about this new loom motor, or, write for Bulletin GEA-5011B. Apparatus Dept., General Electric Co., Schenectady 5, N. Y.

TOTALLY ENCLOSED LOOM MOTORS

GENERAL ELECTRIC

Another Standout—

in the CRANE Corrosion-Resistant Line



Double Duty Plug Gate Valves

IN 18-8 MO OR MONEL

WORKING PRESSURE:
150 pounds, gas or liquid
Sizes: ½ to 2 in.
Flanged or screwed ends

These new Crane Plug Gate Valves perform double duty with equal efficiency—as globes, for high or low velocity throttling—as gates, for straight-through, unrestricted flow. Their unique circular plug disc and seating design combines the best service characteristics of conventional gate and globe valves.

In wide-open position, flow discharge is equal to that of a wedge gate valve. In throttling, resistance to cutting equals that of plug type globes. They will not stick even when closed while hot, opened when cold. Galling is eliminated.

In addition to dual-purpose utility, these valves offer famous Crane Quality in construction and materials. All parts in contact with flow are 18-8 Mo or Monel, the most versatile of common corrosion-resistant alloys. Ask your Crane man about these Plug Gates, or **write for Catalog No. 320,** describing them fully.

IN SIZES 2½ TO 6 IN.

Crane offers a companion line of corrosion-resistant gates and globes. Working pressure: 150 pounds, liquid or gas. Made in all 18-8 Mo or all Monel. Flanged ends. Swing check valves available in sizes ½ to 6 inches.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

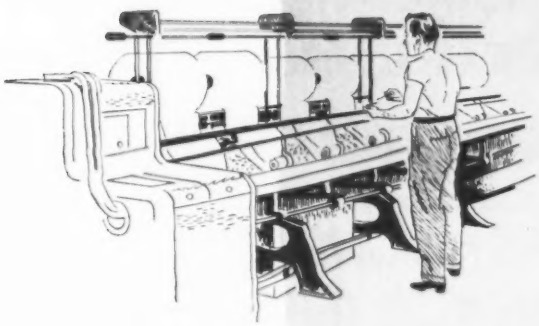
EVERYTHING FROM . . .

VALVES
FITTINGS
PIPE

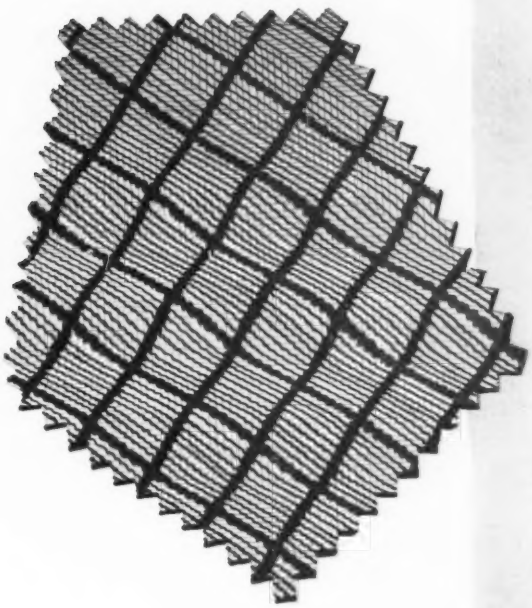
CRANE

PLUMBING
AND
HEATING

FOR EVERY PIPING SYSTEM



ALUMINUM IS LIGHT.... ALUMINUM IS STRONG



Think of these facts as applied to a comber

Moving parts of Alcoa Aluminum increase machine speed by reducing weight. They are strong enough to take hard knocks without breaking. They smooth out machine motion and quiet vibration. Combers with aluminum parts work harder, produce more.

Alcoa Aluminum means extra money's worth in the machines you buy. Alcoa Aluminum is a basic material for the machines you build. Alcoa's Development Division is ready to assist you in alloy selection, design and fabrication problems. Write ALUMINUM COMPANY OF AMERICA, 1427 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM • MAGNESIUM

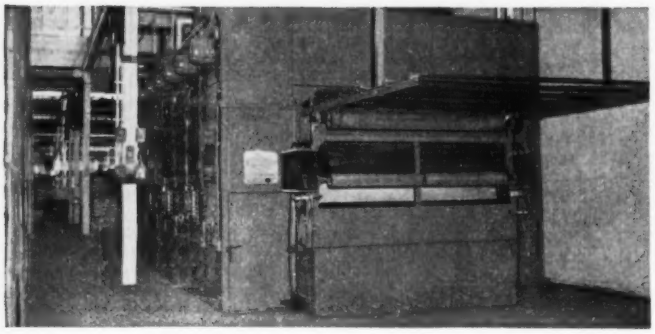
INGOT • SHEET & PLATE • SHAPES, ROLLED & EXTRUDED • WIRE • ROD • BAR • TUBING • PIPE • SAND, DIE & PERMANENT MOLD CASTINGS • FORGINGS • IMPACT EXTRUSIONS
ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS

TEXTILE MACHINERY and

PUBLISHED BI-MONTHLY FOR TEXTILE MILL EXECUTIVES AND OPERATING PERSONNEL BY PROCTOR & SCHWARTZ, INC.

• SEPTEMBER • 1949 •

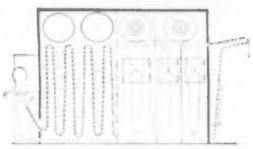
"Airlay" Feature of Proctor Multipass Dryer Promotes Rapid, Uniform Tensionless Drying

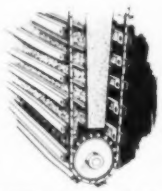


For achieving the ultimate in the finished appearance of goods that are to be dried without tension, many mills are finding the Proctor Multipass "Airlay" Dryer to be ideally suited.

It is from the machine's basic principle of design that it derives the name "airlay"—and it is this principle that accounts for the superior results that are being achieved.

The material to be dried is carried through the machine on a conveyor equipped with cork-faced supporting girts. This conveyor (illustrated by close-up drawing), travels upward and downward in a series of U's, as can be seen from the side elevation. The material is held gently and evenly against the girts by the pressure differential between adjacent air chambers. The air thereby serves the double purpose of drying the material and helping to carry it. It assures a uniform distribution of





air over all of the material, resulting in extremely rapid drying. When material is fed into the dryer without wrinkles or creases, it will come out in the same manner.

Since neither the machine nor the principle is drastically new—it is well beyond the theory stage. It has a proven performance record in many textile mills who have found it to be the answer to rapid, uniform, tensionless drying for quality fabrics.

CURRENT ARTICLE ON BLENDING AVAILABLE

During the summer, John H. Senior, a Vice President of Proctor & Schwartz, Inc. and one of the leading men behind the development of modern blending systems, prepared an article on the subject of blending for one of the textile magazines.

The article is comprehensive and traces the development of the blending of textile fibres from its early beginnings up to the present. The theory, practice, and machinery used for fibre blending, are clearly set forth by a man who has been largely responsible for the growth of this comparatively recent development in the industry.

Because of the wide interest in this subject, we've had reprints made of this article which are available upon request. Write for "Fibre Blending" by John H. Senior.

PROCTOR RESEARCH KEEPS ABREAST OF DEVELOPMENTS IN CURING

Proctor engineers, who pioneered much of the equipment that is today in wide use for curing resin treated fabrics, are keeping up-to-date on current practices in this field through constant touch with mills where Proctor curers are in operation.

In current operation are two basic types of Proctor equipment for curing. The Proctor Loop Curer offers high capacity, while the Proctor Roller Curer is used for more moderate output requirements.

Each machine is recommended only after a careful study of individual mill and fabric requirements. Because of Proctor & Schwartz long association with the design of equipment for this purpose and their close cooperation with textile technologists, they are in an excellent position to make recommendations for your needs.

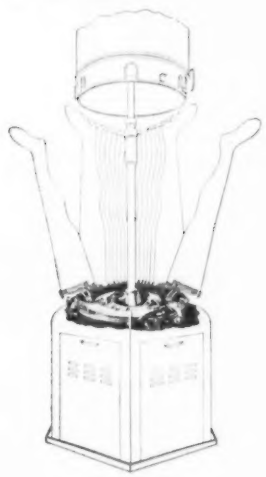
DRYING EQUIPMENT *News*

MECHANICAL IMPROVEMENTS IN PREBOARDING EQUIPMENT CONTINUE TO ATTRACT ATTENTION

The mechanical improvements made in the re-design of the Proctor preboarding machine several months ago—and first shown to a large audience at the Knitting Arts Exhibition early this Spring—are still continuing to attract the attention of hosiery men throughout the industry.

These improvements include a changeover from a hydraulic piston arrangement for raising and lowering the boards to a cam which operates mechanically, illustrated below . . . and the addition of the dual-board take out device. By means of the latter, boards are brought out individually and continuously at the two boarding positions on the machine. Wear and maintenance are cut to a minimum.

Write for details.



Development Continues As Applications Increase for Automatic Stock Conveying

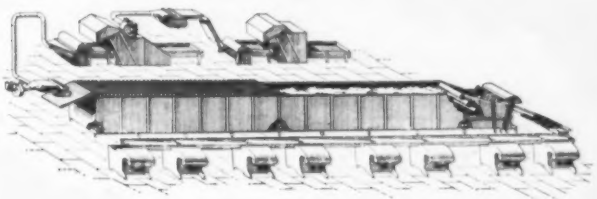
Recent months have seen many developments in Proctor automatic stock conveying systems. These developments have come about as applications for these modern stock conveying systems have been made in many types and sizes of textile mills.

There is nothing static about the possibilities of automatic stock transfer. The basic principles remain essentially the same but the arrangement and type of equipment used, varies with the individual mill problem. The end results are always the same. The systems automatically deliver stock where it is required, when needed and in the quantity desired. Wherever these systems have been installed, labor requirements have been reduced to an absolute minimum and all of the guesswork and expense of hand feeding have been eliminated.

Stock may be put through a variety of preliminary blending operations from which it is ultimately conveyed overhead to a spot above either card hoppers or storage bins. In the system illustrated, component stocks are put through two pickerings and then given a final blend in a roller distributor with a magazine hopper. The completely blended mass of stock is then automatically fed from the roller distributor to an overhead conveyor which transfers it to a patented series of short overlapping conveyors, each equipped with its own reversible motor drive. The entire system is controlled by electrical switches tied in with feeler mechanisms on the card hoppers. When all of the hoppers are filled, the system ceases to operate and also shuts off preliminary equipment. As soon as any hopper requires more stock, the system automatically resumes operation.

Variations of the basic principles are being made all of the time. If you have a stock conveying problem—let Proctor engineers study it with you and suggest a system that will be "job engineered" to your requirements and the amount of money you are prepared to invest.

Much Proctor drying equipment and textile machinery is covered in full or in part by patents or patents pending.

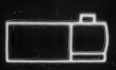
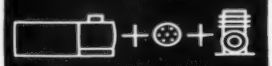


Proctor & Schwartz, Inc. **710 TABOR ROAD** *Philadelphia 20, Pa.*

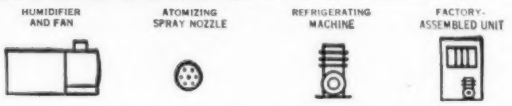
PROBLEM:

How to find the most profitable air conditioning

SOLUTION: **ONE OF CARRIER'S 5 SYSTEMS**

CENTRAL STATION SYSTEM CONSTANT HUMIDITY VARIABLE TEMPERATURE		Gives maximum evaporative cooling. Mill temperatures are dependent on outside weather and therefore hour-to-hour variations are unavoidable. Generally better than the Combination System for humidities of 75% to 65% or lower, depending on various other conditions.
COMBINATION SYSTEM CONSTANT HUMIDITY VARIABLE TEMPERATURE		Gives good evaporative cooling. Mill temperatures are dependent on outside weather and therefore hour-to-hour variations are unavoidable. More favorable in cost than the Central Station System for humidities of 65% to 75% or higher, depending on various other conditions.
CENTRAL STATION SYSTEM WITH REFRIGERATION CONSTANT TEMPERATURE CONSTANT HUMIDITY		Gives absolute control of temperature regardless of outside weather and eliminates trouble-making hour-to-hour, day-to-day variations. It combines the cost advantages of the Central Station System plus Refrigeration. Provides the maximum benefits for labor, the best conditions for fibers, and a minimum of machine readjustment.
COMBINATION SYSTEM WITH REFRIGERATION CONSTANT TEMPERATURE CONSTANT HUMIDITY		Gives absolute control of temperature regardless of outside weather and eliminates trouble-making hour-to-hour, day-to-day variations. It combines the cost advantages of the Combination System plus Refrigeration. Provides the maximum benefits for labor, the best conditions for fibers, and a minimum of machine readjustment.
SELF-CONTAINED SYSTEM CONSTANT TEMPERATURE CONSTANT HUMIDITY		Will do all that the other systems will do. It is ideal for small rooms, laboratories, pilot plants, cafeterias, offices, and other small areas because it is factory manufactured and assembled. A wide range of capacities is available and the units are unusually compact, easy to install, and low in cost.

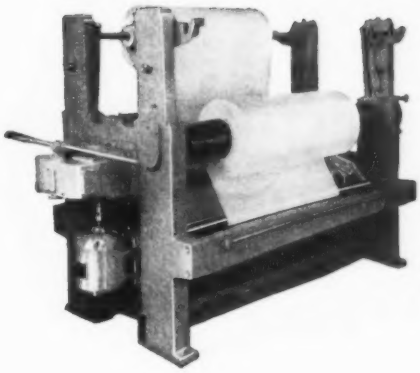
KEY:



With five systems, Carrier has no axe to grind other than to recommend the one best suited to your needs. Carrier's forty years of experience in the textile field assure you of a know-how that provides the most practical set-up for men, material and machines. A Carrier installation makes dollars and sense. For complete information, call your nearest Carrier representative or write us. Carrier Corporation, Syracuse, New York.

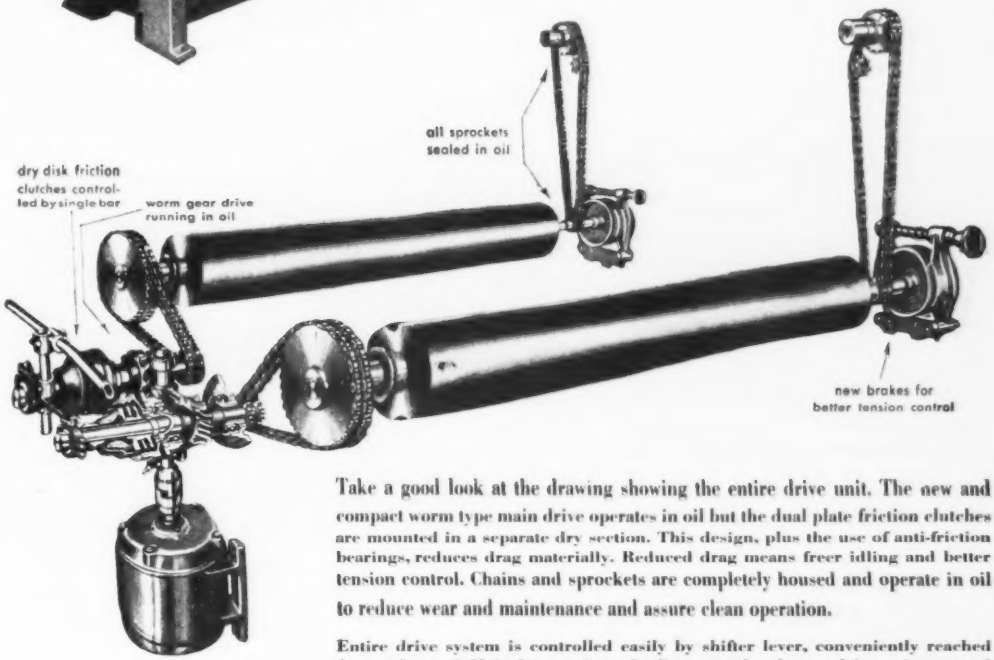
Carrier

AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING



LOOK TWICE AT THIS *New* JIG

Van Vlaanderen has set an entirely new standard in jig performance with this machine. Better tension control, drag-free idling, easier and cleaner operation, capacity for larger cloth rolls and better production are all here, enabling you to produce better quality goods at lower costs.


all sprockets sealed in oil
dry disk friction clutches controlled by single bar
worm gear drive running in oil
new brakes for better tension control

Take a good look at the drawing showing the entire drive unit. The new and compact worm type main drive operates in oil but the dual plate friction clutches are mounted in a separate dry section. This design, plus the use of anti-friction bearings, reduces drag materially. Reduced drag means freer idling and better tension control. Chains and sprockets are completely housed and operate in oil to reduce wear and maintenance and assure clean operation.

Entire drive system is controlled easily by shifter lever, conveniently reached from either end. Main drive unit can be dismounted and spare drive unit mounted in half hour—a valuable aid in keeping production at the peak where the number of machines in operation justify a spare drive unit.

Other important features: heavy vibration-free cast iron side frames, stainless steel tank, 7 ¼" rubber covered rolls, new overflow arranged sideways, guide rolls stainless steel. Oscillating type expander unit with stainless steel curved bars and immersed rolls. Guide rolls mounted on special stainless steel roller bearings. Better tension control with redesigned malleable iron brakes and tension indicator permit quick, accurate readings. Other type brakes if desired.

We have made arangements to show you this machine in actual plant operation.

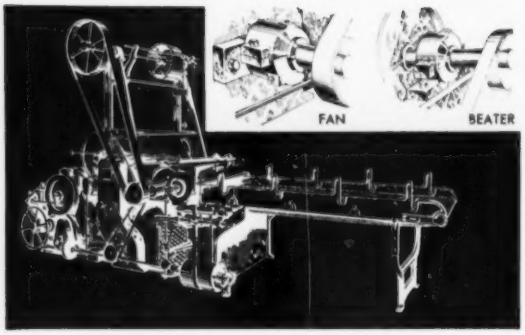
Also

Van Vlaanderen builds a constant-speed, tensionless dyeing machine which is the standard of value where tensionless dyeing is important.

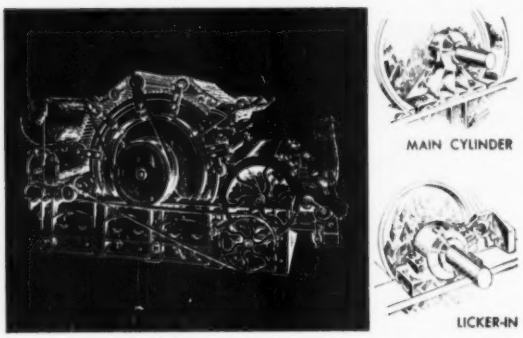
VAN VLAANDEREN MACHINE COMPANY

370 Straight Street • Paterson 3, New Jersey

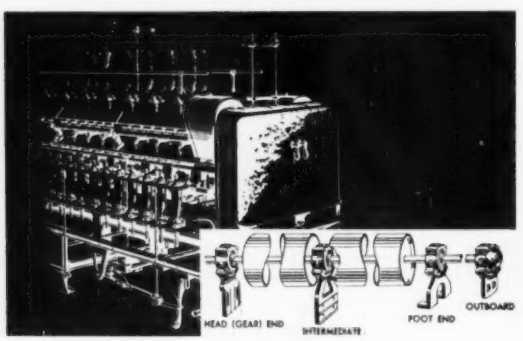
World's largest manufacturer of machines for processing modern fabrics



SS CHANGEOVER UNITS for PICKERS—*Fans and Beaters,* SKF-equipped, maintain proper settings and operate at constant speeds because there is practically no wear.



SS CHANGEOVER UNITS for CARDS—*Main Cylinders and Licker-Ins*—SKF Bearings support heavy loads and operate at high surface speeds .... eliminate worn shafts and lubricant leakage.



SS CHANGEOVER UNITS for SPINNING FRAMES and TWISTER CYLINDERS—SKF Self-aligning Bearing is preassembled in self-contained housing. *One* basic unit, four bearings .... adaptable to any position on cylinder.

SKF BEARINGS are STANDARD on

Southern States TEXTILE CHANGEOVER UNITS

The largest manufacturer of cast-tooth and cut-tooth gears in the South, Southern States Equipment Corp. of Hampton, Georgia, has standardized on SKF Bearings for their textile changeover units.

The design of the units permits a wide adaptation to most textile machinery. Regardless of the type of your changeover requirements, Southern States has the unit—and it's SKF-equipped. SKF Industries, Inc., Phila. 32, Pa.

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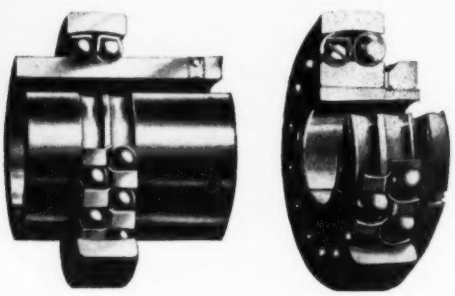


TEXTILE BEARINGS ENGINEERED BY SKF

palatines for wool

palatine fast dyestuffs

more production with less manpower

. . . offer the lowest coloring costs for quality results.

. . . approach chrome color fastness (without the addition of chrome) by simple acid dyeing process.

. . . are fast to light, washing, perspiration, crocking, sea water and wear.

. . . are level dyeing on mixed wool and carbonized goods without neutralization—with excellent penetration. Most types are dischargeable with Rongalite.

. . . are particularly suitable for men's wear, dress goods, gabardines, tropical worsteds, cloakings, bathing suits, knitting yarns, carpet yarns and tops.

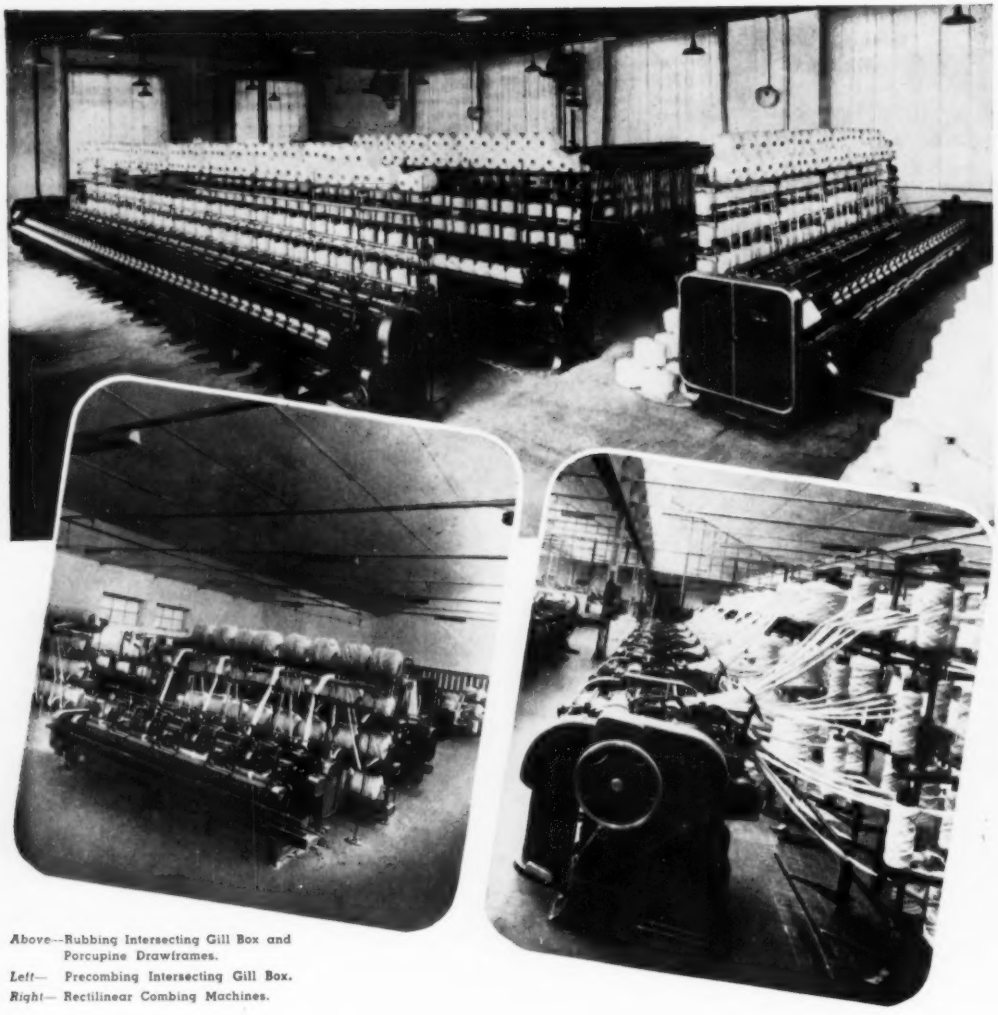
. . . on wool-nylon mixtures they produce good tone in tone dyeings of very good fastness to light and washing.

GDC

GENERAL DYESTUFF CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

BOSTON • PROVIDENCE • PHILADELPHIA • CHICAGO • CHARLOTTE • SAN FRANCISCO



Above—Rubbing Intersecting Gill Box and Porcupine Drawframes.
Left— Precombing Intersecting Gill Box.
Right— Rectilinear Combing Machines.

We manufacture a complete line of machines for combing and spinning of wool, ramie, rayon, synthetic fibers and blends.

25 Years' Experience. Our Machines Are Running in Hundreds of Mills All Over the World.

OSA

Officina Meccanica

SANT'ANDREA—NOVARA, ITALY

Exclusive Agents for U.S.A. ERNEST L. FRANKL ASSOCIATES, 22 East 40th St., New York, U.S.A.

"HELP WANTED"

IS OUR SPECIALTY

MANUFACTURER WANTS ADHESIVE especially adapted to seaming textile-reinforced bag...composed of burlap outside, laminated crepe-kraft inside. Adhesive selected must have proven performance and economy.

Let *us* worry about your adhesive requirements.

We make a wide line of industrial adhesives . . . including non-inflammable SYNTEX* aqueous dispersions of rubbers and resins and latex compounds. Also asphalt emulsions, solvent cements and hot melt types.

For both wet and dry combining and bonding of a large variety of materials, chances are one of Flintkote's compounds will meet your needs.

If not, we'll call on our extensive research and development staff. These men make new problems their business . . ."help wanted" their specialty.

And they have an impressive record of successes behind them. Tire Cord Solutionings. Rug and Carpet Backings. Curled Hair Binder. Cloth and Leather Cements. Rubber to Metal Cements. Textile and Paper Laminants, Coatings, Saturants and Sizings. And a host of others.

Our entire research, development and manufacturing facilities are at your disposal. Whenever help is wanted, write us regarding your standard or special requirements.

*TM REG. U. S. PAT. OFF.

THE FLINTKOTE COMPANY, *Industrial Products Division*, 30 Rockefeller Plaza, New York 20, N. Y.

FLINTKOTE
INDUSTRIAL PRODUCTS

FLINTKOTE
Products for Industry

Here is Plain PROOF...

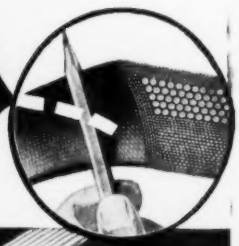
You can actually feel the sides of a belt *change shape* as the belt bends.

That the

CONCAVE SIDE

(U. S. Patent No. 1813698)

SAVES Transmission DOLLARS



When a *straight-sided* V-Belt bends around a pulley, three things are bound to happen.

(1) The top of the belt, being under tension, *narrows*. (2) The body of the belt, under compression, *widens*. (3) The sides of the belt *bulge out*.

These *shape changes* are inevitable. They are shown in figures 1 and 1-A, below.

Straight-Sided V-Belt.

How Straight-Sided V-Belt Bulges in Sheave-Groove.

Because this bulging belt does not fit the sheave groove, two facts become clear. (1) The belt will get excessive wear where it bulges—*shorter life!* (2) The whole side of the belt cannot *uniformly* grip the pulley—*a loss in drive efficiency*.

How different the V-Belt with the precisely engineered *concave* side (U.S. Patent No. 1813698)—the Gates Vulco Rope. As this belt bends it assumes a shape that *exactly* fits the sheave groove. (Figures 2 and 2-A, below.)

Gates Vulco Rope with Concave Side.

No Side Bulge. Precise Fit in Sheave-Groove.

Two savings result. (1) The Gates Vulco Rope wears evenly—*longer life!* It's entire side-wall grips the pulley—no slip—*full delivery of power!*

The Mark of SPECIALIZED Research

The Concave Side is MORE IMPORTANT NOW Than Ever Before

Because the sides of a V-Belt are what actually drive the pulley it is clear that any increased load on the belt means a heavier load that must be transmitted to the pulley directly through the belt's sidewalls.

Now that Gates *SPECIALIZED* Research has made available to you SUPER Vulco Ropes—carrying fully 40% higher horsepower ratings—the life-prolonging Concave Side is naturally more important in conserving belt life today than ever before.

498

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 71 Foreign Countries

THE GATES RUBBER COMPANY

DENVER, U.S.A.

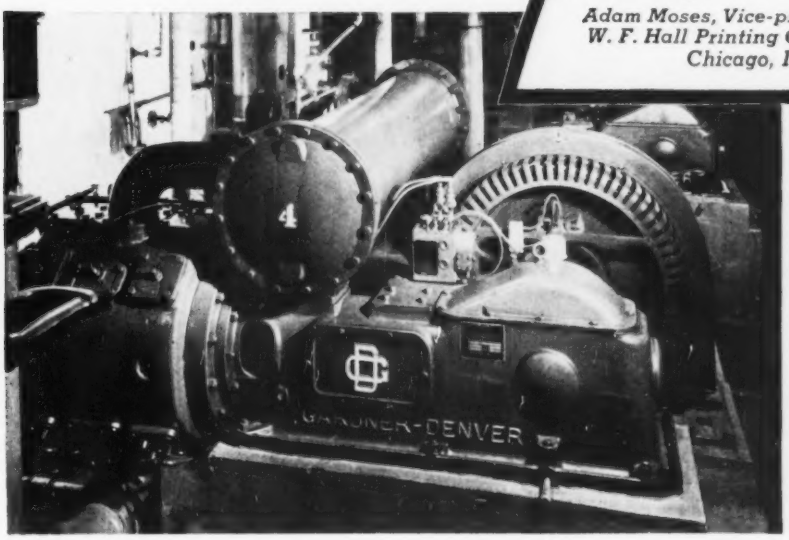
"The World's Largest Makers of V-Belts"

NO STOPS... NO REPAIRS...

In more than two years!

"For the past two years our Gardner-Denver compressor has operated under approximately 100% load for 24 hours a day, seven days a week ... overall performance has been exceptionally satisfactory."

Adam Moses, Vice-pres.
W. F. Hall Printing Co.
Chicago, Ill.



A Gardner-Denver HAB 13½ & 8 x 8 two-stage, horizontal compressor in the W. F. Hall Printing Co. plant, Chicago.

Continuous operation! Yet this Gardner-Denver Class "HA" Horizontal Compressor has required *no repairs other than minor adjustments* in more than two years. Accurate flow meter equipment indicates no variation in compressor output. Volumetric efficiency remains high . . . horsepower requirements low. Here are some "HA" features that explain this uninterrupted service record:

★ AIR CYLINDERS oiled by force-feed lubricator with separate and adjustable feed to each cylinder. Large and unrestricted valve and port areas result in low velocities and minimum friction losses.

★ TIMKEN ROLLER MAIN BEARINGS eliminate shaft friction and wear—provide permanent rigidity with freedom from bearing vibration, pounding and side thrust.

★ LARGE WATER JACKET areas for cooler running . . . lower discharge temperatures and lubricating economy.

★ HEAVY-DUTY SIDE CRANK type main frame of massive design—heavily ribbed and reinforced to give maximum strength and rigidity.

★ DUO-PLATE CUSHIONED VALVES for high delivery capacity.

For complete information, write Gardner-Denver Company

GARDNER-DENVER

Gardner-Denver Company, Quincy, Illinois
In Canada: Gardner Denver Company (Canada) Ltd., Toronto, Ontario

Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.

Since 1859

FOR YOUR INFORMATION

How wool mills chop costs

Mill management is being called on to deliver profits even when sales volume is down. One plain way to do it is to pare operating costs, to produce less expensively and in less time. Many mill managers, and more every day, are realizing they can do this with a Monsanto chemical, Syton, because Syton gives from 10%-to-30% more yarn strength in woolen and worsted spinning.

Here is how Syton increases earnings:

1. By helping to produce more in less time.

Many mills . . . spinning carpet or knitting yarns for example . . . reduce twist with Syton and hence boost production. Other mills report fewer ends down during spinning and weaving . . . better roping condensation, reduced fly and card waste. Production costs go down, savings up.

2. By improving the product

Many mills find they can spin blends hitherto impossible. Almost all mills report that Syton enables them to spin any given stock to a finer count.

Hundreds of woolen and worsted spinners . . . more every day . . . are proving that Syton is a practical production speeder . . . and a money maker for management.

Certainly that's reason enough to find out how Syton can work in your own mill. We're ready to give you full details about Syton and our technicians are ready to help you right at your own plant.

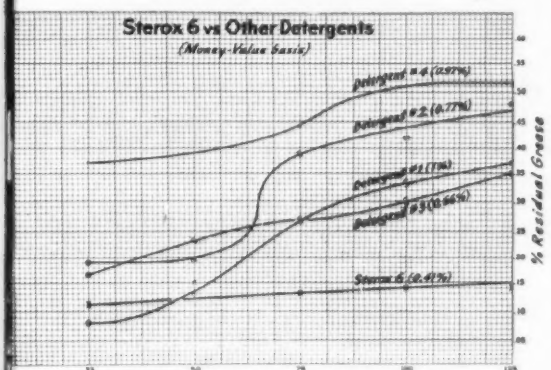
New, free booklets describe your savings with Syton

Four newly completed booklets describe in detail the uses of Syton for more efficient, and *economical* woolen and worsted spinning. Check one or all you wish, and get them through the handy coupon.

For woolen spinners: *"Syton for stronger, more uniform yarns."*
For worsted spinners: *More uniform yarns, increased spinning: More uniform yarns, increased strength, yarns spun closer to count.*
For carpet makers: *"Syton for loftier, 'more blooming' yarns."*
For Commission spinners: *"Syton for faster spinning of all types of fibers."*

STEROX 6

a new detergent for wool scouring



Sterox 6, a new detergent which Monsanto Chemical Company is introducing to the textile industry, has demonstrated high efficiency in the removal of oil and grease from wool fibers.

This contribution, the result of extensive research on synthetic detergents, wetting agents and cleaning compounds, is recommended for effective wool scouring.

Sterox 6 is a detergent that varies greatly in chemical composition and action from any other detergent.

Test work shows that Sterox 6 is outstanding, not only for removal of oil and grease, but also for its ability to hold them in suspension without redeposition on the fiber.

Further tests show that Sterox 6 is more efficient than other detergents on a money-value comparison.

For full information on Sterox 6, mark the handy coupon.

MONSANTO CHEMICALS—PLASTICS

SERVING INDUSTRY . . .
WHICH SERVES MANKIND

STYMER "S" acetate size

eliminates GEL problem

Enthusiastic mill owners everywhere report that Stymer "S" can be left in size-boxes overnight . . . that it does not "set" when cold, causing lines to clog. It eliminates messy clean-up jobs . . . saves both time and materials.

Stymer "S" is a new synthetic sizing agent whose uniformity and quality are strictly controlled. In addition to its non-gel properties, Stymer "S":

Increases plant efficiency.

Gives warp a superior finish over a wide range of humidities and temperatures.

Reduces static electricity.

Is non-gumming, non-thickening, non-mildewing; will not set or sour.

Minimizes dirty knot problems. Stymer's detergent power removes dirt picked up by knots.

Forms abrasive-resistant film without undue stiffening.

Is easy to dissolve from the woven fabric in warm water containing a mild detergent.

New Stymer Booklet

A new, free booklet on Stymer is available to you through the handy coupon. Send today for the booklet: "Stymer 'S', the Synthetic Size for improved Slashing of Synthetic Warps."

MONSANTO CHEMICAL COMPANY, Textile Chemicals Department
Desk TWT-21, 140 Federal Street, Boston 10, Mass.

Please send me: New Syton booklet for spinners, for worsted spinners, carpet makers, commission spinners; New Stymer booklet; full information on Sterox 6.

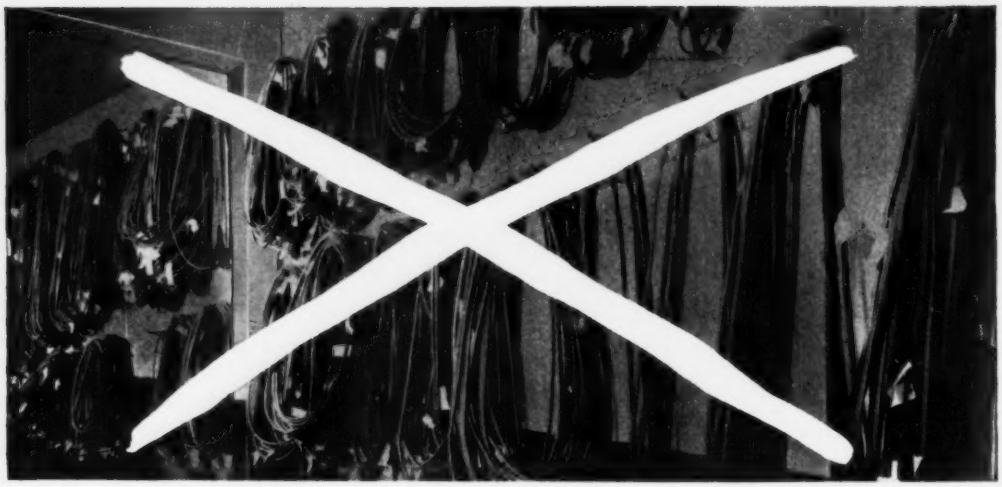
Name Title

Company

Address

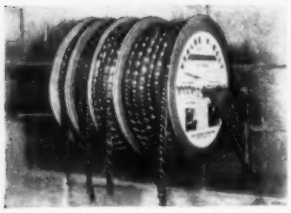
City Zone State

Syton, Stymer, Sterox: Reg. U. S. Pat. Off.

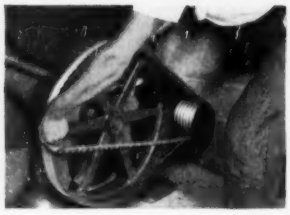


Here's how to cut your v-belt costs

You can replace up to 316 sizes of endless v-belts with just 4 reels of Veelos



From these four reels of Veelos you can make up 316 sizes of O, A, B and C section endless v-belts.



Any length belt can be coupled for quick installation on any drive in a few minutes.

Machine downtime is practically eliminated. Sliding or pivoted motor bases are not needed.

MAYBE you need belts of only one or two widths—but many different lengths—to keep all your drives producing. Then one or two reels of Veelos will give you a *complete* v-belt inventory.

You don't need to tie-up working capital in a heavy v-belt stock . . . you don't need to maintain costly inventory records. *With Veelos, you have the right size v-belt for any drive in your plant—all the time!*

Veelos on reels saves valuable storage space. It simplifies stock records; it eliminates belt deterioration and obsolescence.

Veelos is simple and easy to install. No need to dismantle drives with fixed centers or outboard bearings . . . no long, expensive interruptions to production. Just loop it around the sheave and couple the ends.

Check the advantages of Veelos and you'll agree that it can provide substantial savings for you.

VEELOS
THE LINK
V-BELT

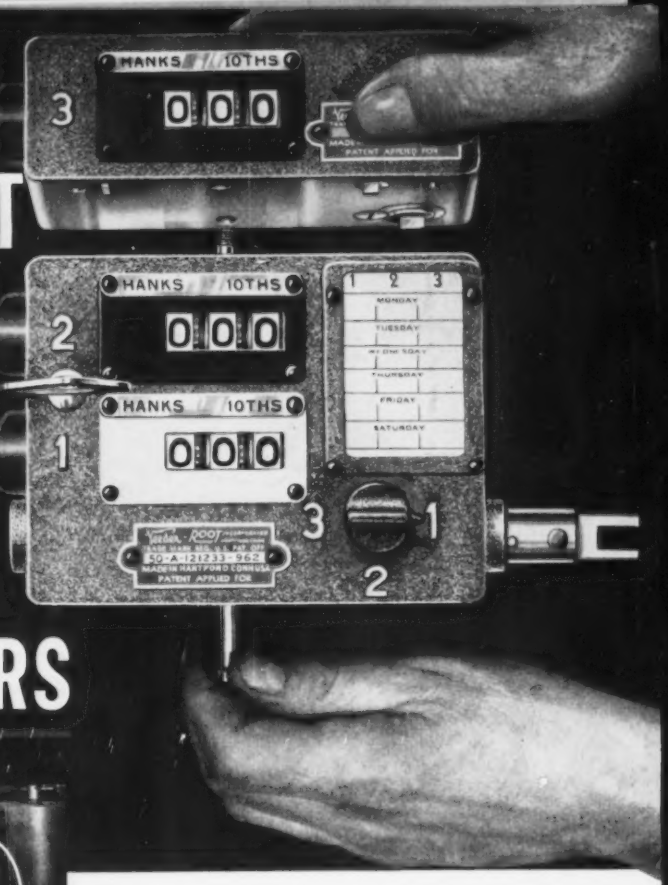
Everyone responsible for power transmission needs this Veelos data book. Gives complete engineering data, measuring and installation directions. Shows Veelos at work on scores of different drives in many different industries. Write and we'll send you a copy *free!*

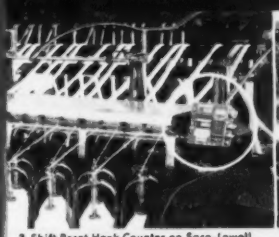
MANHEIM MANUFACTURING & BELTING COMPANY
MANHEIM, PA.

ADJUSTABLE TO ANY LENGTH • ADAPTABLE TO ANY DRIVE

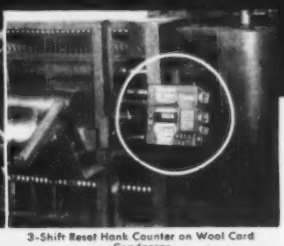
Made in all standard sizes, fits all standard grooves. Packaged on reels in 100-foot lengths. Sales engineers in principal cities; over 350 distributors throughout the country. Veelos is known as VEELINK outside the United States.

Get VEEDER-ROOT 2 3 CONVERTIBILITY in HANK COUNTERS



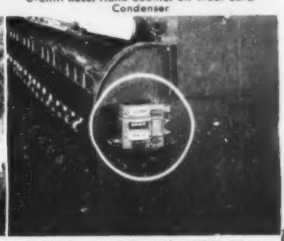


3-Shift Reset Hank Counter on Saco-Lowell Long-Draft Roving Frame



3-Shift Reset Hank Counter on Wool Card Condenser

3-Shift Reset Hank Counter on Cotton Beam Twister



3-Shift Reset Hank Counter on Whitin Wool Ring Spinning Frame

...for Frames and many other Mill Machines

These husky hank counters are convertible, right in your own mill, from 2- to 3-shift operation... just like the famous Veeder-Root 2-3 Pick Counters.

Veeder-Root 2-3 Hank Counters are built for top durability. And they have what it takes in the way of gear-reduction to convert the roll-revolution count into hanks and fractions.

Get this valuable Veeder-Root protection against errors and losses on all your spinning, roving and drawing frames . . . and on all twisters, combers, speeders, slubbers. Write for Catalog T-48, showing the full line of Veeder-Root Reset and Non-Reset Hank Counters, as well as the 8-way adaptable Right-Angle Drive. And get in touch with your nearest Veeder-Root office for experienced, reliable counsel on *any* counting problem.

VEEDER-ROOT INCORPORATED

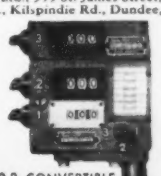
HARTFORD 2, CONNECTICUT · GREENVILLE, SO. CAROLINA

"Counting House of the Textile Industry"

World's Most Complete Line of Textile Counters

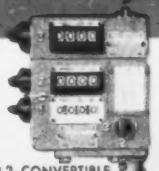
In Canada: Veeder-Root of Canada, Ltd., 955 St. James Street, Montreal 3
In Great Britain: Veeder-Root Ltd., Kilspindie Rd., Dundee, Scotland

LOOM CUT-METERS



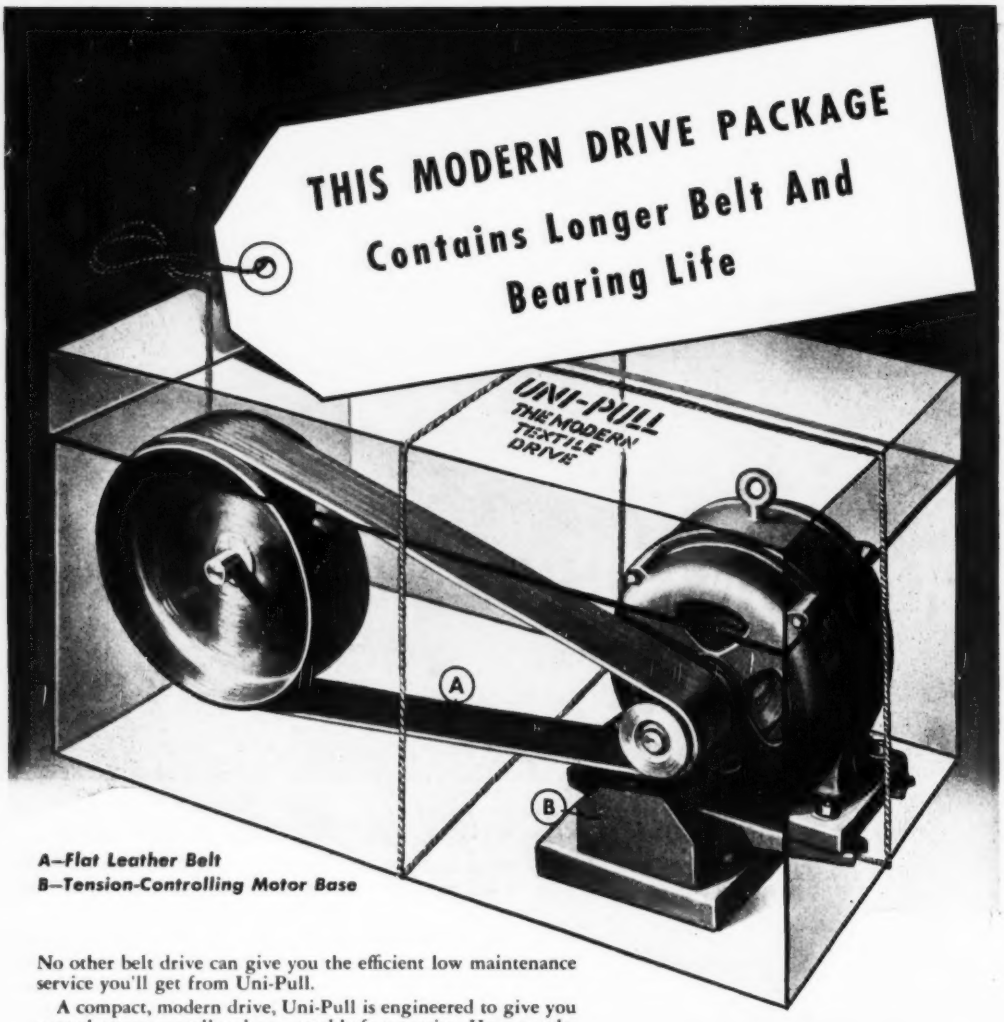
2-3 CONVERTIBLE PICK COUNTERS

LINEAR COUNTERS



2-3 CONVERTIBLE KNITTING COUNTERS

...all these and scores of other types... Send for Catalog T-48



A—Flat Leather Belt
B—Tension-Controlling Motor Base

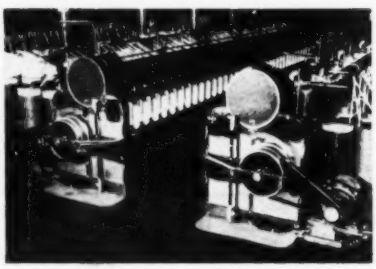
No other belt drive can give you the efficient low maintenance service you'll get from Uni-Pull.

A compact, modern drive, Uni-Pull is engineered to give you smooth starts as well as long, trouble-free service. Here are the two Uni-Pull reasons why.

1. UNIFORM PULL ACROSS THE PULLEYS—The flat leather belt gives you a full, wide, even grip across the pulley faces. Your pulling power is undivided, it can't become uneven. It's impossible for any part of the belt width to loaf and put extra strain on the rest. Furthermore, no substitute material can surpass the strong, lasting pulley grip of good leather belting.

2. UNIFORM PULL AROUND THE PULLEYS – The tension-controlling motor base enables you to predetermine and automatically maintain a belt tension that makes life easier for bearings. It minimizes jerky, end-breaking starts.

Ask your leather belting supplier about modernizing your power transmission with Uni-Pull.



American **LEATHER BELTING** *Association*

Headquarters for Authentic Power Transmission Data

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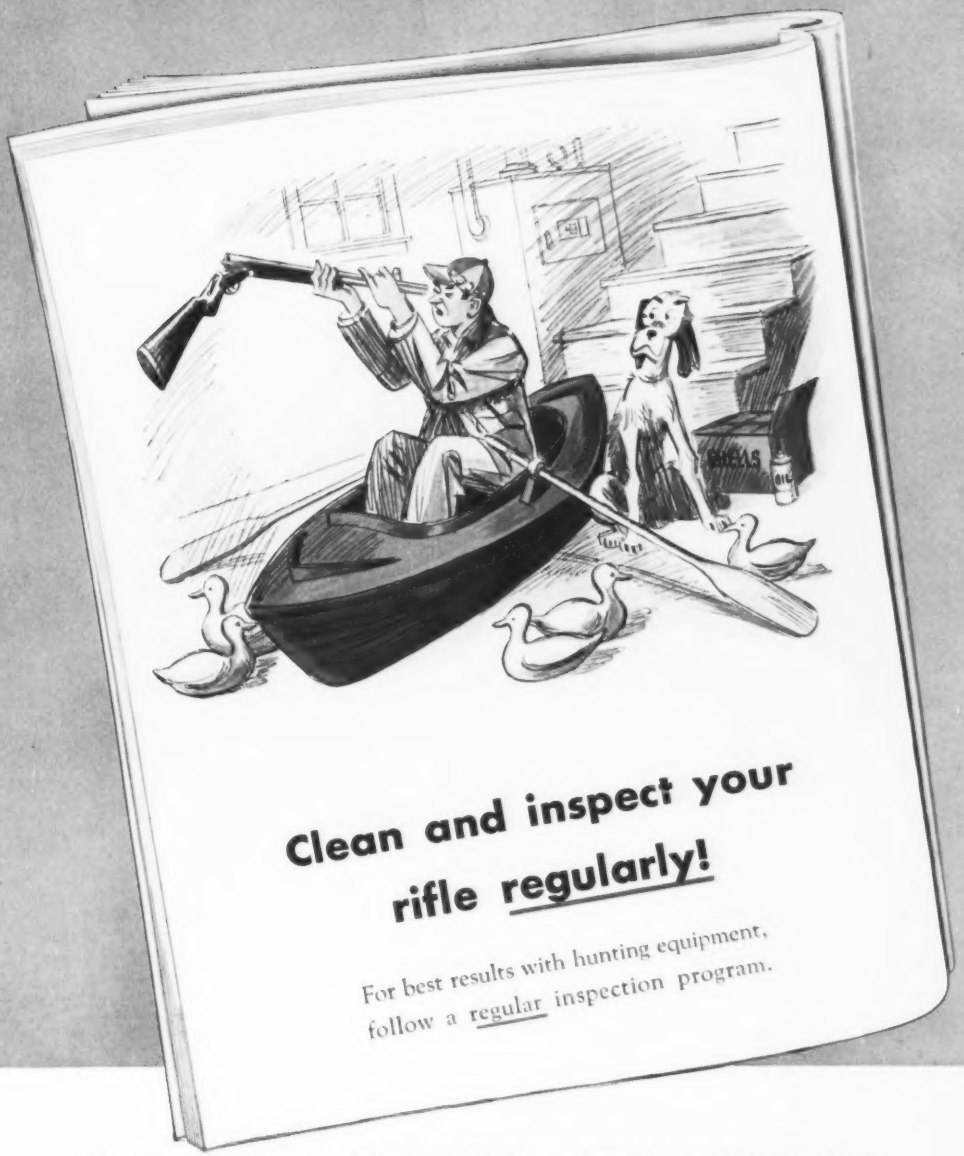


Clean and inspect your rifle regularly!

For best results with hunting equipment, follow a regular inspection program.

Have your Full-Fashioned Knitting Machines checked—regularly—to keep them at highest efficiency . . . Follow a regular program for reneedling and your needle bars are always in shape for better knitting . . . Follow a regular program for reconditioning and your plant is always at peak performance. We will be glad to discuss this matter of regularity as it applies to your mill operation.

TEXTILE MACHINE WORKS • READING, PA.

The "READING"
Full-Fashioned Knitting Machine

Smoothness where it counts

It takes rigid quality controls, a special steel formula, and scientific packaging methods to insure the smooth, mirror-like finish identified with every Textile Spring-Beard Needle. And because Textile Needles are smoother, yarn moves around needle ends easier, faster, resulting in improved, high-speed knitting results.

Smoothness where it counts is but one of the many advantages you get from Textile's precision controls—automatic and electronic. You get stronger, straighter needles that mean better performance and bigger profits. Try them in your needle bars.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

For Full Fashioned and Warp Knitting

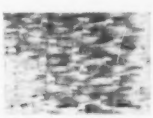
HELP YOURSELF

To Opportunity

WITH **FIBERGLAS*** YARNS

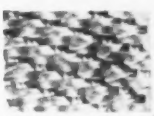
HERE IS ANOTHER EXAMPLE OF HOW ALERT WEAVERS ARE PROFITING BY THE VERSATILE CHARACTERISTICS IN THESE YARNS

The types of yarn used, weave and thickness of the cloth, largely depend on the physical properties required in the laminate. Pictured below are three commonly used weaves.



Satin

Square



Unidirectional

FABRIC WOVEN OF FIBERGLAS YARNS... has greatly increased the use of textiles for reinforced laminates due to their superior mechanical properties and permanence under extreme conditions of heat and humidity. Large quantities of this fabric are moving into the plastics industry to produce laminates which have high-strength-weight ratio, great impact resistance, freedom from cracking, high heat resistance and enduring resistance to the elements.

FIBERGLAS* YARNS CAN BUILD NEW MARKET OPPORTUNITIES FOR YOU!

Fabric development men, converters and mills have solved many problems, achieved many successes by using Fiberglas yarns.

Here are a few examples of fertile fields that are producing textile profits—waterproof membrane fabrics, fabrics for electrical insulation, industrial tapes, gaskets, conveyor belts, filter cloths, steam hose, convertible auto tops, fender welting, awnings, curtains, and upholstery.

To solve your problems on new construction or improved products, write or phone today for Fiberglas technical representative. Our research experts are at your service—either in your mills or in our textile laboratory. Owens-Corning Fiberglas Corporation, Textile Products Division, 16 East 56th Street, New York 22, N. Y.

- EXCELLENT ELECTRICAL PROPERTIES
- NONCOMBUSTIBILITY
- RESISTANCE TO OILS & ACIDS
- RESISTANCE TO MILDEW & ROT
- HIGH TENSILE STRENGTH
- DIMENSIONAL STABILITY

OWENS-CORNING CORPORATION MAKES ONLY THE FIBERGLAS YARNS—NOT THE FINISHED PRODUCTS.

*FIBERGLAS IS THE TRADE MARK (REG. U. S. PAT. OFF.) OF OWENS-CORNING FIBERGLAS CORP., FOR A VARIETY OF PRODUCTS MADE OF OR WITH GLASS FIBERS.

OWENS-CORNING FIBERGLAS *Yarns*

There's only one family of Stainless Steels that will meet all your requirements

ALLEGHENY METAL is the *only* stainless steel that is produced in every commercial grade and finish—and more especially, in every shape or form that a fabricator may need.

From *one* source, therefore, you can get everything . . . sheets, strip, plates, bars, wire, shapes, fine wire, tubes, castings or forgings—in the type of stainless steel that the service conditions require. What's more, you can get it *now* . . . Allegheny Metal is promptly available to your order.

Use this convenient, one-stop source of supply for stainless steel—the clean, strong, shining metal that's cheapest in the long run because it *lasts* longest. • When you're in the market for stainless, think first of Allegheny Metal.

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Complete technical and fabricating data—engineering help, too—yours for the asking.

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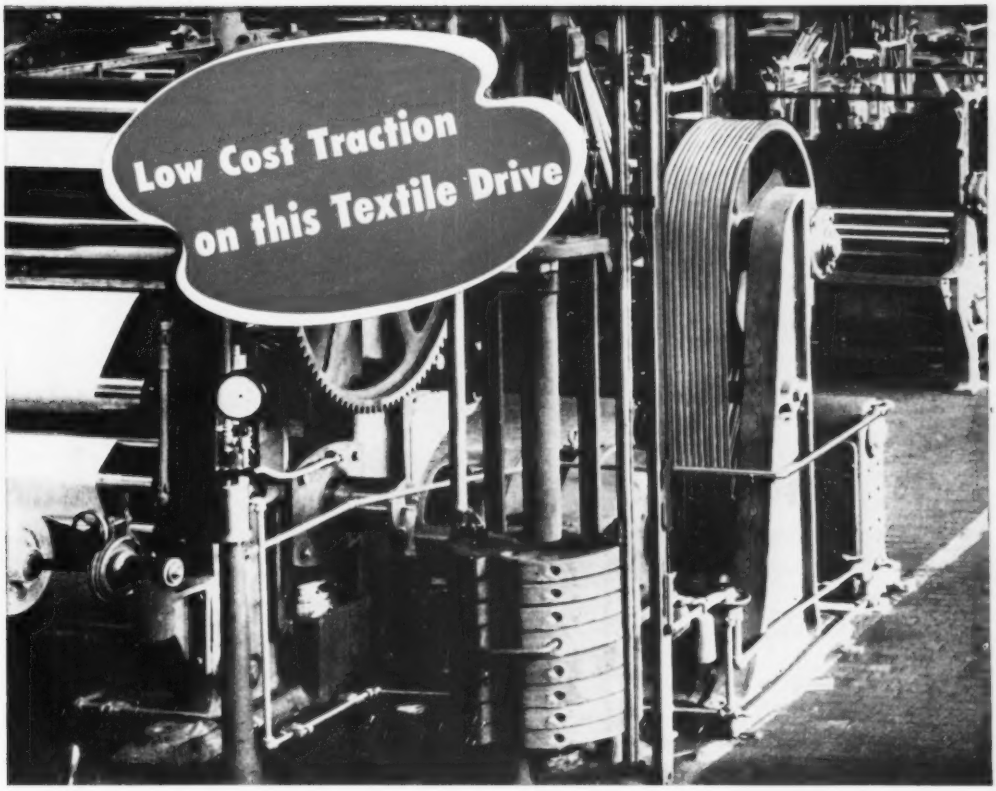
Allegheny Metal is stocked by all Jos. T. Ryerson & Son, Inc., Warehouses



. . . with *Condor* Whipcord V-Belts

This dye plant, one of the largest in the textile industry, is driving costs down with Condor Whipcord V-Belt. For example, on the big hydraulic calenders shown above, Condor Whipcord V-Belts deliver maximum traction because they are *pre-stretched* during manufacture. When a team of Whipcord V-Belts is put on a drive like this all inelastic stretch has been taken out, so that every belt pulls its share with no slacking or slipping. This means minimum loss of costly power and minimum down time for replacement of belts.

The Strength Members of Condor Whipcord V-Belts are imbedded in a cool running cushion of Manhattan's exclusive Flexlastics which, together with a high grade cover, insures these Eight Benefits:

EIGHT BENEFITS

1. Minimum Ultimate Stretch
2. Wide Margin of Effective Strength
3. Uniform Flexibility
4. Maximum Resistance to Structural Breakdown
5. Smooth Running
6. Maximum Traction
7. High Resistance to Side Wear
8. Correct Lateral Reinforcement

You can be sure your V-Belt drive costs are as low as you can get them, if all drives are equipped with Condor Whipcord V-Belts. Send today for illustrated bulletin #6868C.

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

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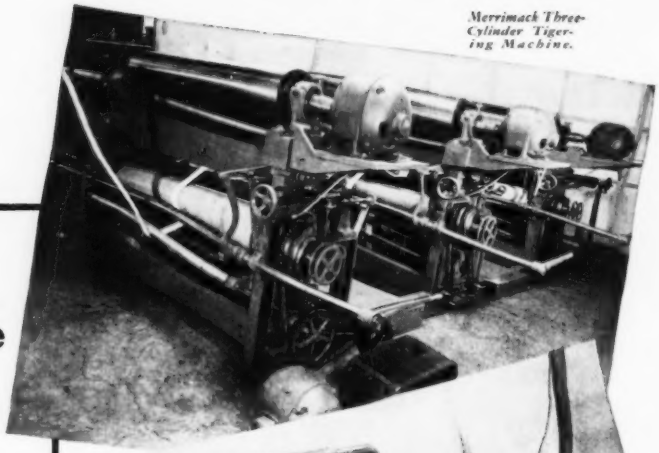
Manufacturers of Mechanical Rubber Products • Rubber Covered Equipment • Radiator Hose • Fan Belts • Brake Linings • Brake Blocks • Clutch Facings • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive & Diamond Wheels • Bowling Balls

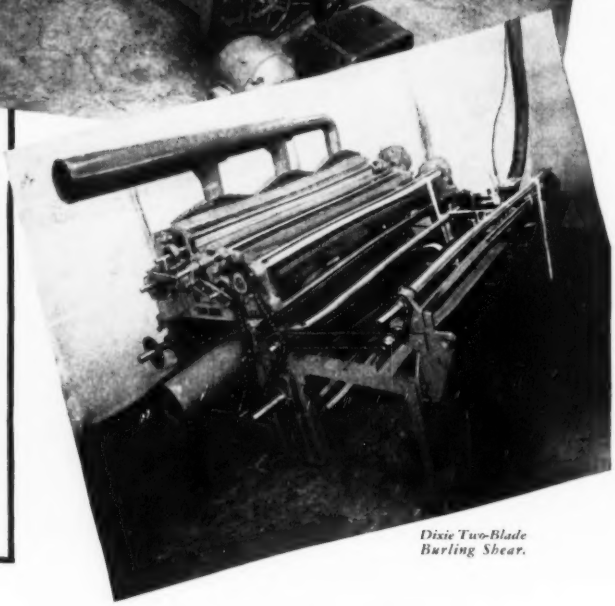
For Intra-Machine Operations

TRADE DIAMOND MARK

DIAMOND Roller Chains Provide Flexibility of Application



Merrimack Three-Cylinder Tigering Machine.



Dixie Two-Blade Burling Shear.

• Delivering power from one shaft to another or to several, regardless of center distances is accomplished accurately and dependably by long-life Diamond Roller Chains.

Even if there is an obstruction present—an idler will take care of detouring the power as shown in the Dixie Burling Shear illustration.

Interested in long-life performance, makers of machinery for the textile industry have long been users of Diamond Roller Chains. Over a half century of years have established Diamond's position in its field.

For improved performance, elimination of power wastes and unnecessary maintenance—extend your use of Diamond Roller Chains . . . Properly encased, all danger of product damage through lubrication throw-off or "spatter" is avoided. DIAMOND CHAIN COMPANY, Inc., Dept. 483, 402 Kentucky Ave., Indianapolis 7, Ind. *Offices and Distributors in All Principal Cities.*

DIAMOND ROLLER CHAINS

It keeps the STATIC out of your stockings

Here is the Turbo "quick dry"—60 to 90 seconds in the Turbo Finish Boarder produces static-free stockings, perfectly finished. Makes stockings easy to handle without the cost of special dampening equipment. A turn of a dial gives you just the temperature you want.

Your finest stockings stay smooth and even throughout the finish boarding operation. Fabrics cannot creep because forms remain upright. Air flow is directed from top of form down over leg and welt and returns to fan to be recirculated.

Production is 250 dozen pairs in 8 hours with two boarders.

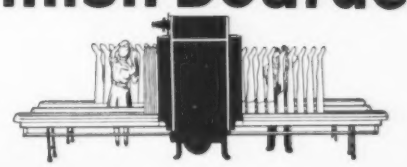
Check these economies of the Turbo Finish Boarder: No service employee is required to straighten piles. You can run four sizes at one time—there are four groups of 12 forms each. Maintenance is negligible. Steam consumption is low.

Get the complete Turbo story. A 20-page book, fully illustrated, is yours for the asking. Write us today.

TURBO MACHINE CO., LANSDALE, PA.

TURBO PREBOARDER
No banging or jolting to injure the fabric or jangle the nerves. Two groups of 18 forms each—you can change 36 forms in 5 minutes. Produces up to 145 dozen pairs in 8-hour day, with one operator. Write for folder.

TURBO
Finish Boarder



think of Speed Control -and you think of Reeves

To insure perfect control of shrinkage of cloth, of whatever fabric is being preset with this new Van Vlaanderen Boil-Off Machine, five REEVES Speed Control units are used. A REEVES Motodrive varies the speed through the entire range, as desired, and four small REEVES Transmissions drive the four pairs of drums.

As pioneers in the field of speed control engineering, REEVES has "grown up" with the textile industry. In the many varied "steps" of processing yarn and the manufacture of cloth, the need for accurate variable speed control is a primary "must." The ability to change machine speeds for different kinds of yarn and fabric, or to vary temperature and moisture content, is absolutely essential for best results—and REEVES has kept pace with the industry's developments.

REEVES Speed Control, either manually or automatically operated, is accurate, infinitely variable. Speed changes are made instantly, without stopping the machine. Over 265,000 units now in service.

More REEVES Speed Control units are at work in textile plants throughout the country, than all other speed control devices put together. If speed control is involved, REEVES representatives and REEVES engineers know the industry's problems and how to solve them. Write for a man to call, or for new catalog W22-3-N.

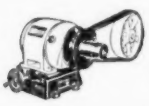
REEVES PULLEY COMPANY · COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Speed Control Engineering

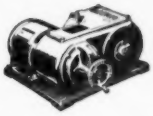
ACCURATE · VARIABLE
Reeves Speed Control
GIVES THE RIGHT SPEED FOR EVERY JOB!

THE THREE BASIC REEVES UNITS

VARIABLE SPEED TRANSMISSION for providing infinite, accurate speed flexibility over a wide range—2:1 to 16:1. Sizes—fractional to 87 hp.



VARI-SPEED MOTOR PULLEY provides an instantly variable speed drive within 4:1 ratio for any constant speed motor. Sizes to 10 hp.



MOTODRIVE combines motor, speed varying mechanism and reduction gears in single unit. Speed variations 2:1 to 6:1 inclusive. Sizes to 20 hp.

Your Invitation to

Bigger Profits

You are cordially invited to make bigger profits!

A better product means bigger profits, and by using *Florence Tailored Color* you can improve your products.

Florence Tailored Color is our exclusive dyeing and processing of cotton, wool, synthetic or blended yarns by special laboratory and technical methods, giving you the exact *color* you specify, the exact *fastness* you specify, and the *quality* you require. *Florence* alone gives you *Tailored Color*. The yarn is either supplied by you or obtained by us.

This is an invitation worth accepting. R. S. V. P.

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ESTABLISHED 1894

Fairview Street, Riverside, New Jersey—Phone Riverside 4-0211

New York Sales Office: 40 East 34th Street, New York 16, N. Y.

Package Dyers and Processors of Cotton, Wool, Synthetic and Blended Yarns

Processors and Distributors of "USTEX"* Industrial Sewing Threads

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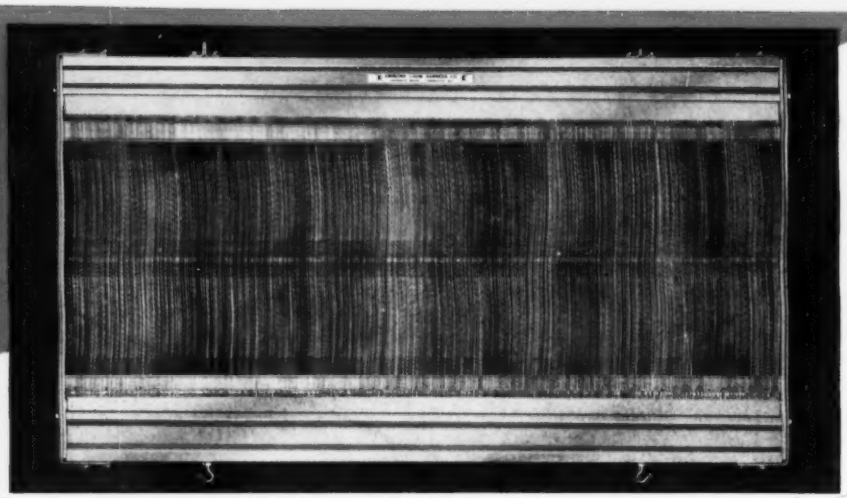

EMMONS ALUMINUM DRAWING-IN FRAME!

A True Continuous Slide Type

The Newest and The Best Answer For Filament Rayon Weaving!

Note these EMMONS design features!

Heddles slide freely the full length of the frame. Heddle rods are permanently spaced at proper intervals . . . there are no rod supports. The possibility of faulty adjustment is overcome. Heddle rods have beaded edge, which, because of scientifically shaped bearing surface, aids free sliding of the heddles.

Frame ends are detachable, allowing for the addition or subtraction of heddles. Frames come in double iron or combination construction and are of single bar style in 3/8" thickness only.

EMMONS Drawing-In Heddles

Make use of these EMMONS operational features!

1. Warp may be either machine or hand drawn.
2. Frames extremely easy to clean.
3. Heddle and yarn breakage greatly reduced.
4. Frames impervious to humidity. Keep their shape.
5. No special repair heddles required.
6. No rod holders or lock hooks to get out of adjustment.

ALUMINUM FRAMES ARE BETTER FRAMES!

Here's why!

Aluminum Frames won't corrode, regardless of weave room humidity! Aluminum Frames are many times stronger than wood and last longer!

Aluminum Frames also available for standard heddles. Get in touch with your nearest E Man.

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EMMONS

WEAVE ROOM EQUIPMENT

MAIN OFFICE AND PLANT: EMMONS LOOM HARNESS CO., LAWRENCE, MASS.

AN INDUSTRIAL-RELATIONS LESSON is received by trainees (right) as they sit in on a step in the Merrimack Mfg. Co. grievance procedure.

Mills Profit From COOPERATIVE TRAINING

HIGHLIGHTS: *Joint program carried out by mills and Lowell Textile Institute—Definite schedule governs trainee activities—Program considered success by all concerned.*

By JAMES R. KING
Merrimack Mfg. Co.

A NEW APPROACH to the old problems of training young people for careers in the textile industry is now entering its second year. Just over one year ago, officials of Lowell Textile Institute, Lowell, Mass., and the management of eight New England mills entered into an experiment in cooperative education. Preliminary reports indicate that all concerned, the mills, the school, and the students, are thoroughly pleased with the fine results of the experiment.

Textile-school officials have long been aware of a serious deficit in the planning and execution of a practical program for students. Mill managers have been aware of a lack of purpose and understanding in graduates of the textile schools. As a result, an attempt is now being made to integrate phases of scholastic training with industrial experience.

Cooperative training, as such, is not a new concept. However, its application in formal textile education raises the necessity of new approaches by plant managers, educators, and students.

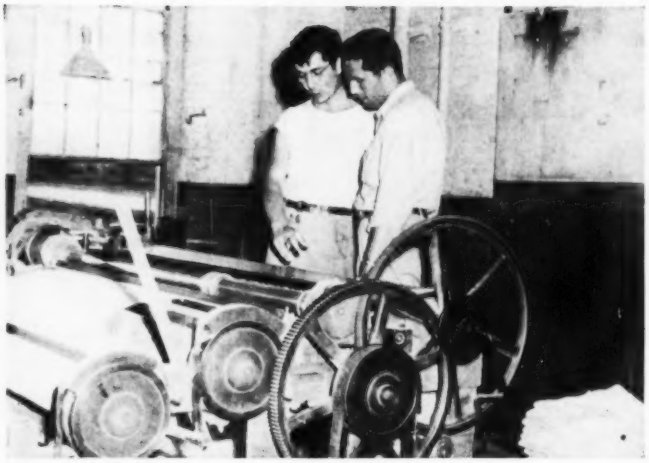
At the present time, no radical change in the scholastic setup is anticipated. The cooperative phase of training is carried on during summer vacations of students. At this point, plant officials take over responsibility for the student with a planned program of orientation, training, and work.

Before the actual start of the program, officials of Lowell Textile Institute and Chicopee Mfg. Corp., Manchester, N. H., spent several months in the trial and development of the practical considerations of the program. This work served as a guide for other organizations in developing their specific programs.

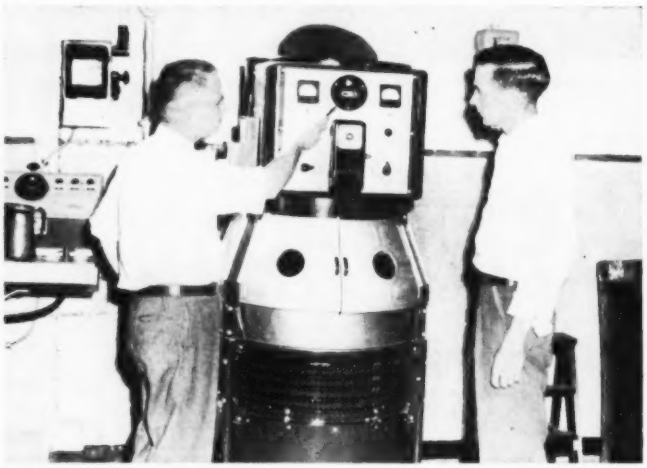
As a particular instance of the interest and participation of a textile mill in this program, the Merrimack Mfg. Co., Lowell, Mass., is used as an example.

SUMMER EMPLOYMENT. Simplest aspect of the cooperative program consists of finding as much employment as possible during the summer vacations for as many college undergraduates as possible. This broad selection tends to spread appreciation of the industry that these students would not otherwise acquire.

The objectives in the joint program are six: (1) to provide for an integration of theoretical with practical knowledge, (2) to provide a better understanding and appreciation of the



***CORDUROY CUTTER** Nicholas Georgakakos instructs trainee Robert Sloan in the highly specialized skill of cutting Merrimack corduroy.*



***FADEOMETER TESTS** are explained by chief chemist Theodore Cote to trainee Samuel Woods.*

differences between learning on a nonproductive basis and performance on a mass-production schedule, (3) to provide a broader management viewpoint by observing and experiencing the functions of management from a worker's standpoint, (4) to make it possible for the trainee to determine the wisdom of his choice of either his major study or life vocation and to allow him to make necessary practical adjustments before entering the competitive picture. This procedure will also enable the industry to determine the suitability of the student to the industrial pattern previous to actual employment. (5) To provide the textile industry with a supply of technically trained personnel more flexible and adaptable to industrial organization, and (6) to provide Lowell Textile Institute with concrete and factual data from which it can design its curricula to conform better to the requirements of the industry.

Standards for the program were set up as follows: Two students are chosen yearly by the mill from the chemistry course and two students enrolled in the cotton, general-manufacturing, or engineering courses. Students chosen must reside in the New England States. Selected students are assigned a work schedule by the personnel department of the mill under the supervision of division superintendents and department overseers. Trainees and supervisors submit appropriate reports on these assignments.

The choice of two students from each of the major divisions of the institute was decided upon because Merrimack consists of an integrated cotton-manufacturing division, a converting division, and a maintenance division. Work schedules were planned to give the four students one summer for an over-all picture of the plant by working in each department of each division and by spending some time in the personnel and the office departments. In following years, it is planned that the students might spend more time in the divisions most closely connected with their course of study, i.e., chemistry, manufacturing, or engineering. For the first summer, students selected were between their sophomore and junior years; but it is desired in the future to select students upon completion of their freshman year and to give them a three-year training program. Four new men would be brought in each year to replace those who graduate.

Reports from the departmental supervisors are used to check on the work and the progress of each individual, while the weekly reports of the students are used to evaluate their response and observation of the mill functions, and to serve as a basis for improving and refining the schedule in later years.

SCHEDULE. The following is a typical schedule of one of the trainees:

COTTON-MANUFACTURING DIVISION

1. Personnel dept.—One day.

As a preliminary to the entire program, the student is processed through the regular employment channels, given a lecture on company history and plant organization, taken on a tour of the manufacturing division, introduced to the overseers under whom they later work, and introduced to executive management.

2. Opening room—One and a half days.

The trainee is taken through the storage facilities and shown how cotton is stored, opened, prepared in even-running mixes, fed to blending openers, conveyed, and distributed to the pickers. In the synthetics section, the trainee is shown opening and preparation of rayon and wool for blends, blending and conditioning of lots to be processed, feeding and tinting of stock before the breaker pickers, the creeling operation, and doffing of the finisher pickers. Storage and the flow of finished laps is also studied.

3. Carding—Five and a half days.

The carding phase of the program is divided into three parts: Carded stock, combed stock, and blends, with emphasis on the particular problems of each kind of stock. On the cards, the

trainees learn how to operate the machines, how to creel and doff, and are shown card setting, reclothing, and grinding. For the carded and blended stocks, the theory of drawing is explained; and the trainee receives some experience in creeling, doffing, settings, changeovers, and operating drawing frames, long-draft roving frames, and fly-frames. On combed stock, a similar procedure is followed for sliver and ribbon lappers; combers, with emphasis on combing theory, settings, and noil percentages; drawing frames; long-draft-roving frames; and fly frames.

Consideration is also given to work loads, problems of waste and waste control, production requirements, and the position of the card room in the over-all manufacturing picture.

4. Spinning—Two days.

The spinning is also divided into three parts; warp spinning, filling spinning, and twisting. Theories of spinning and twist insertion are explained. For warp and filling yarns, differences in twist, yarn packages, and builder motions are discussed in detail. The students then do actual work on creeling and doffing, learn how to piece up in approved fashion, and observe frames being overhauled, including spindle setting, ring setting, and builder setting.

In twisting, the reasons for plying yarns are explained, and the actual operations of twisting are performed briefly.

5. Warp preparation—Three days.

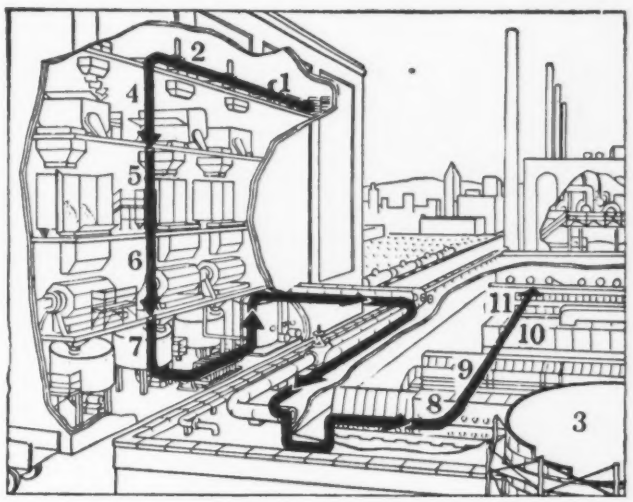
This phase of training is subdivided into four sections; spooling, winding, warping, and dressing. The students learn the functions of spooling and perform work on high-speed spoolers. Cheeses made are followed to the high-speed warpers. From there, the trainees observe the making of sets for the slashers, the operation of slashing, and disposition of warp beams. The functions of slashing and problems involved in both cotton and blends are explained. Size control, moisture control, marking, and warp identification are also explained. An observation of drawing-in follows.

In winding, the high-speed cone winders and filling winders are explained and observed.

6. Weaving—Four days.

In weaving, the trainees are introduced to the problems of weaving cotton and synthetics. They are shown a weaver's duties; they observe how warps are tied in and twisted in, how a new warp is started up; they watch some of the intricacies of loom-fixing and loom repairs, do a little actual weaving, and learn the flow of cloth from weaving to the cloth room.

7. Clothroom—One-half day.



Our Cover

THE COVER PICTURE on this issue we are happy to credit to Armstrong Cork Co., which produced it in cooperation with the Rayon Yarn Producers Group.

Material flow is shown in the small sketch on this page. The cellulose (1) is steeped (2) and then stored (3). After shredding (4), the crumbs are aged (5) and tumbled (6) before being dissolved (7) into viscose. Spinning (8) is shown taking place in a separate building. Spinning is followed by washing and desulphurizing (9), drying (10), and the various textile operations (11) such as twisting and winding.

Here, identification, burling, and inspection procedures are demonstrated.

CONVERTING DIVISION—Five weeks.

In converting, the students are again started off with a tour of the division and are introduced to the various supervisors. Because of the complexity of converting operations, time here is spent mostly in observation and explanation of the different processes.

The students follow corduroy through napping, cutting, malting, scouring, combing, drying, picking up, ashing, bleaching, inspection, winding, dyeing, drying, brushing, passing shade, painting, starching, finishing inspection, and packing.

Velveteens are observed in caustic and dry preparation, cutting, malting, combing, drying, singeing, inspection, bleaching, inspection, winding, dyeing, brushing, passing shade, painting, starching, oiling, finishing, inspection, packing, and shipping.

MAINTENANCE AND REPAIR DIVISION—Four days.

Here, students are acquainted with the functions of maintenance and repair in the mill. Power requirements are explained, and the operation of the boiler house and turbine room in furnishing electric power and steam for the manufacturing operations are shown. Repair facilities are demonstrated by visits to the machine shop, electric shop, pipe shop, tin shop, paint shop, carpenter shop, etc.

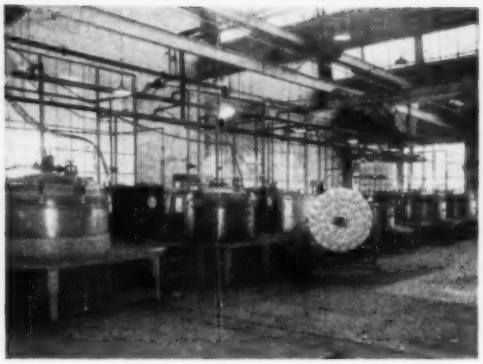
STAFF SERVICE DEPARTMENTS

1. Laboratories.

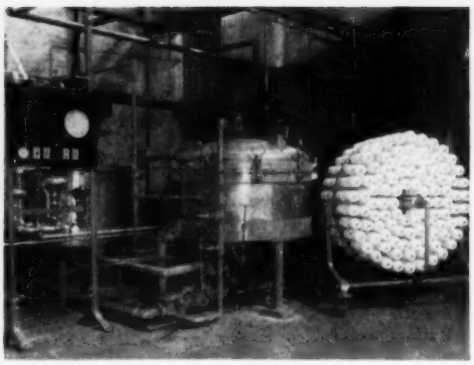
The students spend a day in the chemical laboratory, where they are acquainted with commercial methods of chemical testing and with specialized tests such as dye indices of fibers, dye formulas, light- and wash-fastness determinations.

A day is also spent in the physical-testing laboratory, where sampling procedure, routine testing, special testing, analysis and interpretation of test results, and quality-control procedures are outlined.

(Continued on page 242)



PACKAGE DYEHOUSE equipment at Aberfoyle Mfg. Co., Chester, Pa., includes a travel-rail hoist for handling loaded yarn carriers.



PACKAGE-DYEING MACHINES at Globe Dye Works, Philadelphia, process 500 lb. of yarn at one run. Dye bath circulates every 40 sec.

SMALL-PACKAGE DYEING
Is Making Headway

HIGHLIGHTS: *Parchment-paper tube cover is replacing knitted stocking —Typical dyeing time for cotton yarn ranges from 1½ to 4½ hr., depending on the type of dye—Wool requires 1½ or 2½ hr., depending on the dye.*

By ALBERT P. MARCH
Smith, Drum & Co.

THE PRACTICE OF DYEING YARN on small tubes has increased greatly in the last ten years. The increase has been due mainly to advancement in chemical and processing techniques and mechanical improvements on the machines themselves. The use of stainless steel, the invention of the split manifold, the improved functioning of the pumps, and the use of automatic controls have played important roles.

The dye tubes are made either of stainless steel or of resin-impregnated paper and are perforated throughout the center section for the passage of the dye liquor. The standard tube has an inside diameter of ⅜ in. and an over-all length of 6¾ in.

The adoption of these dimensions as standard has lessened the problem of winding for many yarn consumers. Most mills spinning sales yarns are now prepared to deliver yarn on these tubes, knowing that they will fit the usual dyeing machines.

TUBE COVER. Knitted stockings are sometimes used to cover the tubes for the purpose of filtering the dye bath, reducing slippage when the wind is started, and reducing the velocity and distributing the flow of the dye liquor. These stockings sometimes shrink in length, thus acquiring density. This condition allows the dye liquor to bypass the center of the package and dye the ends of the packages a deeper shade.

More recently parchment paper has been introduced in the form of sleeves to fit over the tubes and as permanent covers for tubes. The paper seems to be a considerable improvement over the knitted stocking.

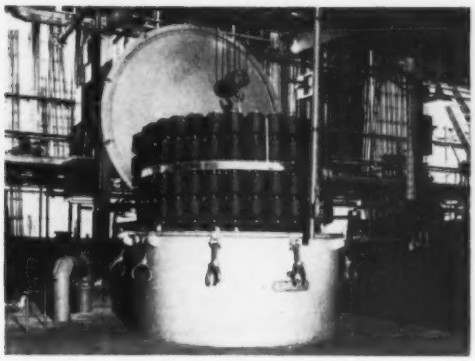
The yarn packages are usually wound on a Foster Model 102 or Universal 44 winder. They are wound with a 6-in. traverse and usually to a 5-in. maximum diameter. When firmly wound, they should hold between 18 and 24 oz. of yarn, depending on the type and count of the yarn. A firm package (which is not too hard) is to be preferred to a soft package, as better dyeing and better backwinding result. Package firmness is especially necessary when wool or worsted yarn is processed.

YARN SPEWS. A soft package will bulge during dyeing, and this distortion will cause back-winding trouble. A common fault in packages wound for dyeing is the rosette effect extending for about an inch outward from the tubes. This condition indicates slack winding, usually caused by slippage near the tube. The outer layers of yarn, being under greater tension, will cause this slack yarn to spew over the ends of the tube when the package is swollen in the dye bath.

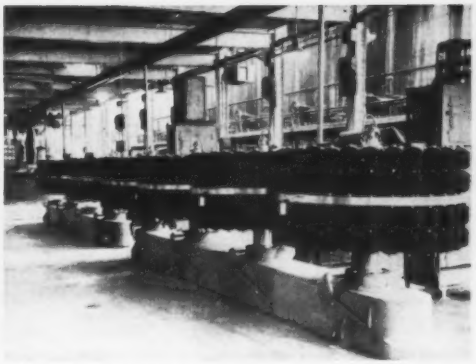
All cotton packages leave the winder with hard, straight shoulders and must be rounded in a crimping press to avoid crossovers and light spots on the shoulders. Crimping need not be carried out on woolen and worsted yarns. The operation is quite simple and requires very little time.

Modern package-dyeing machines, including the pumps, piping, and valves, are of course, constructed of stainless steel. Removable yarn carriers expedite the loading and unloading of batches. By the use of the split-manifold yarn carrier, which mounts two packages per spindle on on each side of the yarn carrier, a flow of approximately 3¾ gal. per min. per package is supplied by the pump under normal dyeing conditions.

Package dyeing is more easily controlled than other systems of yarn dyeing. There is also considerable saving in labor, steam, water, and time. Liquor ratios are usually about 10 to 1, as compared to 30 to 1 for skein dyeing—a saving of two-thirds in water and steam.



AIR-PRESSURE EXTRACTOR at Avondale Mills, Sylacauga, Ala., removes water from yarn by forcing air from outside to inside.



PORT-BLOWER DRYERS at Avondale force hot air through the yarn from inside to outside. This system is fast and saves labor.

TYPES OF DYE. Cotton can be dyed by the direct, aftertreated, developed, sulphur, vat, vat-acid, or naphthol process. Bleaching may be done by the peroxide, chlorine, or combination method.

A good wetting agent is essential, since many plants enter the dry yarn directly into the dye bath without a previous boiling-out. The main function of this wetting agent is the elimination of air from the packages so that bubbles are not retained in the package to cause undyed spots. A nonfoaming penetrant is desirable.

Typical dyeing times for cotton are: direct colors, 1¼ hr.; vat colors, 2½ hr.; naphthols, 4½ hr. Typical dyeing times for wool are: acid colors, 1½ hr.; chrome colors, 2½ hr.

Sampling is easy, and additions can be fed in with the assurance of even distribution throughout the dye lot.

Wool can be scoured and dyed by any of the usual dyeing methods. Scouring is usually carried out with the use of one of the synthetic detergents. In numerous applications, such as carpet yarn, scouring can be eliminated. An important thing to be remembered in dyeing wool is that the bath is short and consequent adjustments in salts and acids must be made. Another major factor is the use of the backwash principle, which allows the dye lot to be cooled gradually. This principle is always an asset in handling wool.

SHRINK PROOFING. Shrinkproofing with chlorine compounds can easily and uniformly be carried out in the package-dyeing machine because of the rapidity of the circulation of the dye bath. (The entire bath passes through the packages approximately every 40 sec.) Resin impregnation is also efficiently accomplished.

It is not practical now to dye filament rayon on small tubes. However, research and some practical work is in progress with modified package machines for dyeing rayon cakes. Spun rayon and blends of rayon-wool and rayon-cotton are easily and efficiently dyed in the conventional machines.

Filament nylon is being successfully dyed on small tubes with the usual range of dyestuffs. The packages, however, are seldom over 12 oz., and the yarns must be preset before dyeing. Other similar synthetic fibers are handled in the same manner. Mixtures of all the major fibers are in large-scale production in a great variety.

EXTRACTION. Extraction of packages is of major importance because of its relation to drying. When packages leave the dye bath, they contain about 150% moisture. The purpose of extraction is to reduce this moisture content to an amount that can safely be removed by hot air in the drying operation. Good extraction is necessary also to prevent migration of direct colors.

Mechanical extraction in the conventional laundry-type centrifuge is becoming obsolete because it results in badly distorted packages and crushed tubes. This latter fault is somewhat overcome by the insertion of dowel pins, which preserve the tubes to a certain extent. Inserting the pins, however, requires a vast amount of labor. This drawback resulted in the development of an extractor that supports the packages in individual baskets. In the course of extraction, the packages are reshaped to the extent that they can often be used on a creel without being rewound to cones.

This method also results in a high degree of extraction in a short time (usually 90 sec.). Based on temperature, size of package, count of yarn, and other factors, the retained moisture can be brought down to about 45% in cotton packages and lower in woolen packages.

AIR EXTRACTION. Another form of extraction of excess moisture is called "air extraction." This method is practiced in two ways: suction and blowing.

The vacuum-type machine has a stand on which the yarn carrier is placed. A strong (usually 60-hp.) pump draws air through the carriage and yarn. A considerable quantity of excess water is removed. The advantages of this system are that little labor is required and no distortion of packages or tubes occurs. The disadvantages are insufficient extraction and high power requirement.

In the blowing method, this process is reversed. The loaded yarn carrier is placed in a chamber, and pressurized air is passed through it from outside to inside. The degree of extraction is increased over the vacuum method, but the same horsepower is consumed.

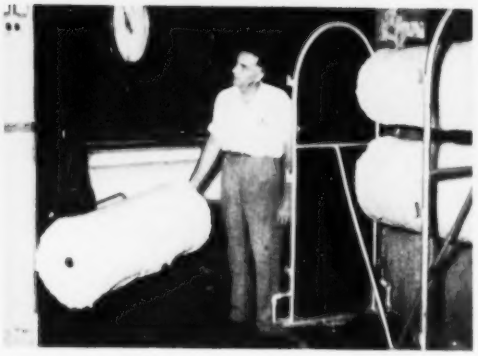
The savings in labor, compared to mechanical extraction, is the same in both of these air systems. However, the degree of extraction is not so great as when mechanical extraction is used.

DRYING. There are three generally used types of drying, all of which utilize the principle of hot air being blown through or around the packages. As yet, infrared and short-wave drying are not in commercial practice, although theoretically they hold considerable promise.

The oldest type of package drying is the oven type in which the pack-

(*Continued on page 224*)

COTTON is Delta Strict Low Middling, 1 1/16 in. for coarse counts and 1 3/32 in. for medium-fine counts. Six-bale mixes are laid down in the opening room.



LAPS should weigh 12.5 oz. per yd. If the weight of a lap varies only a little from 40.6 lb., it's a reject. Yard-to-yard variation is checked weekly.

Knitting-Yarn PREPARATION Must Reflect Quality

By E. DALTON WHITE
McGraw-Hill Atlanta Bureau

HIGHLIGHTS: *Prevention and correction of defects keynote Richmond Hosiery Mills' quality program—Department supervisor is the man with responsibility—Quality yarn is the beginning of quality products.*

"THE HIGH-QUALITY of merchandise produced in a spinning-knitting mill cannot be controlled by an individual or by a single department. Responsibility should rest with the department supervisor. It must stem from him and filter through the entire organization. The incentive for perfection is most successful when it is felt and reflected in the operation of every job."

This philosophy of quality control, expressed by A. L. McCall, superintendent, Richmond Hosiery Mills, Rossville, Ga., has produced excellent results. It has created pride of workmanship among employees and close cooperation between departments.

Development of a system of checks for quality control has led to standardized procedures. Difficulties that develop in one department or phase of processing are discussed with other department supervisors for solutions. Research and pilot operations have produced surprising results in simplification of operations, easing of job loads, and improving quality.

YARN. The mill spins 10s to 30s cotton yarns and buys rayon, nylon, and mercerized cotton yarns. The coarse cotton yarns are made of 1 1/16-in. SLM Delta cotton and the finer yarns of 1 3/32-in. Knitting production consists of anklets, half hose, and women's seamless hosiery.

Manufacturing data are given in accompanying tables.

Schedules for overhauling, lubricating, and cleaning machines and rooms are strictly adhered to. Machines in the opener and picker rooms are mopped each shift. Before the machines are started on the last day of the week, machines, overhead, and walls are blown off with air. Tenders lubricate oil bearings, and men from the maintenance department service grease bearings. Overhauling is done every six months.

Mr. McCall emphasizes the role of the card in controlling quality. "Standardize carding," he says.

Card production is 6¼ lb. per hr. Every eleven days of 3-shift operation (264 hr.) each card is ground and set—cylinder, doffer, and flats. If a web begins to look cloudy or neppy between scheduled grindings, it gets an extra going-over. Each card is completely overhauled each six months.

CLEANING. Card fronts are mopped every 4 hr. Ceilings, walls, hangars, belts, and pulleys are cleaned once a week with air, mops, and brushes.

Sliver and ribbon lappers are cleaned every two hours and overhauled once a year. Combers are cleaned once each shift and overhauled every two years.

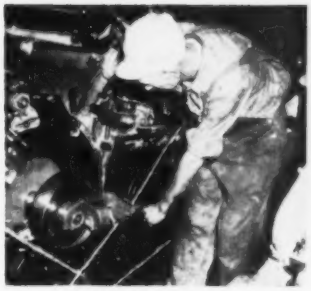
Tops and fronts of drawing frames, intermediates, and speeders are cleaned once a shift; backs once a week. Spindle flyers are cleaned each doff. Drawing is overhauled twice a year, fly frames and spinning frames once.

Quality checks are made once a week on yard-to-yard variation in laps. Yarn size is checked twice a day, breaking strength and appearance once.

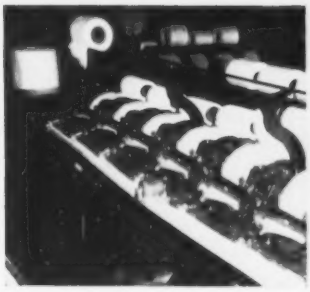
Bad work is watched closely. Creels of speeders and spinning frames are patrolled by tenders, and spot checks are made daily by inspectors. Once a week all frames are inspected for bad work. Records are kept, and each operator is allowed a certain number of bad bobbins.

Recently the mill improved working and operating conditions by installing induced-draft fans in the windows—two on one side of the building, one on the other side. These fans replaced the exhaust fans in roof monitors installed to carry off the heat generated by motors and other equipment. It was found that the exhaust fans created air currents that were not uniform and, in some parts of the processing areas, not entirely desirable.

(*Continued on page 244*)



CARDS ARE SET after each grinding. Two a day are ground and set on the first and second shifts.



COMBERS are completely overhauled every two years. When bars need reneedling, they are sent to an outside shop.

DRAW-FRAME tenders keep rolls and clearers clean. Once a day they give each frame a complete cleaning.

Opening, Picking, Carding Data

Cotton—Delta SLM 1 1/16 and 1 3/32 in.

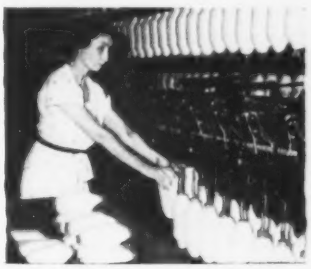
Opening
- Bale breaker (two 18-in. Buckley beaters, 500 to 800 rpm. depending on production demand)
- English cleaning trunk (90 ft. long, with shaking grids)

Picking

Beaters	Speed	Fan Speed
1st—spiked	500 to 1,100 rpm.	800 to 1,100 rpm.
2nd—30-in. Buckley		
3rd—18-in. two-blade plain		
4th—18-in. three-blade Kirschner		

- Lap width—40 in.
- Lap wt.—40.6 lb.; per yd. weight—12.5 oz.

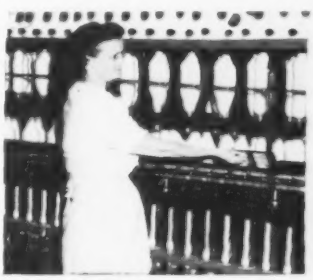
Card
- Number—45
- Tenders—8
- Settings—standard
- Grinding frequency—11 days, 3 shifts
- Stripping—Vacuum, each 4 hr.; hand strip once a week
- Sliver wt.—52.5 grains per yd.
- Speeds (rpm.)
  - Cylinder—165
  - Doffer—6
  - Lickerin—436
  - Flats—3 in. per min.
- Waste (%)
  - Strips—3.5
  - Fly—0.053
  - Motes—1.524



FLY FRAME tenders and doffer helpers carefully stack roving in the doff boxes and clean fronts each doff.

Drawing, Roving, Spinning Data

	Drawing	Roving		Spinning
	(2-process)	Intermediates	Speeders	
Operator's job load	24 deliveries	336 spindles	576 spindles	Spinner, 8 sides Doffer, 12 sides
Drafting system	4-roll	H & B long draft	Conventional	Conventional
Size		10x5	8x4	1 7/8- and 2-in. rings
Roll settings (in.)				
Back	1 7/16	(same)	(same)	1 3/16
Middle	1 9/16	(same)	(same)	
Front	1 11/16	(same)	(same)	1 5/16
Wt. product	Breaker, 61 gr. Finisher, 65 gr.	1.14 and 1.60 Hank	2.30, 3.30, 4.00, and 5.00 hank	10s to 30s
Twist multiplier		1.00	1.30	3.00 to 4.00
Speed (rpm.)	Front roll, 248			Spindles, 5,000 to 8,000
Top-roll covers	Leather	Synthetic	Synthetic	Synthetic
Method of creeling	½ frame at a time	½ frame	½ frame	Single bobbin
Overhauling frequency	6 months	Once a year	Once a year	Once a year



SPINNING FRAME fronts, except rolls and clearers, are cleaned at the doff to guard against slubs in yarn.

YARN APPEARANCE is checked here by Superintendent A. L. McCall. "We're fussy about quality," he says.

Quality-Promoting POSTERS Keyed to Textile Industry

HIGHLIGHTS: *Posters used in mills of United Merchants & Manufacturers, Inc.—Quality tied to cost and worker's job security—Posters available to all mills.*

By WILLIAM A. NEWELL
Managing Editor, TEXTILE WORLD

PICTURED ABOVE ARE the first four of a projected series of 24 posters designed specifically for use by textile mills. Current theme of the charts is to increase employee awareness of the extreme importance of quality and costs in a buyer's market. These factors are tied in with job security. Future themes will be keyed to subjects of timely interest to the industry.

The poster idea originated with the managers of United Merchants & Manufacturers mills. U. M. & M., unable to locate any quality-promoting posters that were geared to textile-industry problems, took up the idea with Labor Relations Institute. The Institute, working with U. M. & M., developed the posters. A new poster will be distributed to U. M. & M. mills every two weeks.

Printing is done by the silk-screen process; each poster has two to four brilliant colors. The posters are so designed that they can be read and absorbed quickly and at a distance. Size is 23¼x19½ in.

Copies of the posters are available from Labor Relations Institute, 1776 Broadway, New York 19, N. Y., at the prices shown below.

On the basis of two issues per month:

1 to 5 posters, per issue	$2.10 per poster
6 to 15 posters, per issue	2.00 per poster
16 to 25 posters, per issue	1.85 per poster
26 to 100 posters, per issue	1.75 per poster

A reduced rate is available for posters purchased on an annual subscription basis.

NEWER SYNTHETICS
Are in the Spotlight

HIGHLIGHTS: After postwar shakedown, man-made fibers forge ahead — Acrylic-resin types will soon be in large-scale production — Polyethylene joins monofilaments — Azlon picture completely changed — Many more fibers still in development or pilot-plant stage.

By C. W. BENDIGO, *Editor, TEXTILE WORLD*

THE POSTWAR SHAKEDOWN in synthetic textile fibers has occurred, and their future course is becoming clear. Synthetics will forge ahead, but attention will continue to be diverted from the older fibers to the newer ones. In 1950, two new fibers will become of considerable commercial importance. Today, one (Orlon) is only in the "pilot-plant" stage; and the other is not even that far along.

In the foreseeable future, the dominant synthetic fibers will continue to be viscose and acetate rayon (viscose and estron, if you prefer that terminology). Viscose, in particular, will be found increasingly in commercial uses—as will nylon, Orlon, the Vinyons, glass fibers, and the monofilaments of saran and polyethylene.

Nylon is here classified as one of the newer synthetics. Actually, its use in a wide variety of civilian products dates from 1946. Except for use as cords (tire and other), the war uses of nylon have very limited civilian adaptation. No comment is needed on nylon hosiery; very little on nylon tricot. Solving the problems of stabilizing woven and knit nylon fabrics is widely expanding the field for this fiber. Less widely known are the inroads of nylon in laces. For this use, it is rapidly replacing fine imported cotton yarns. The relatively new nylon monofilaments, in addition to competing with the other monofilaments, are responsible for developing new types of combination yarns. An example is the all-nylon crepe yarn composed of nylon monofilament and multifilament. Nylon in mono- and multifilament forms is also being combined with acetate rayon (also with some viscose) to obtain new fabrics.

NEW LISTINGS. The tabulation on the reverse side of this sheet of the properties of synthetic fibers commercially available includes several fibers that did not appear in the older, 1947, revision of TEXTILE WORLD'S Synthetic-Fiber Table. They are the acrylin-resin (Orlon), the polyethylene, and the zein-protein fibers.

It is true that, as this tabulation goes to press, Orlon is being produced in very limited quantities in the Waynesboro acetate plant of E. I. du Pont de Nemours & Co., Inc. But work has been begun on a large-scale plant in Camden, S. C.; it should be in operation by the latter half of 1950. The commercial yarns listed for Orlon are the ones either being produced at the time of writing at Waynesboro or those expected to be in the initial production at Camden. Others are sure to be added later. No staple is listed.

POLYETHYLENE. A brand-new yarn is listed for American Viscose Corp. It is polyethylene fiber in monofilament form. It marks the entrance of that company into competition with the older monofilament saran. The National Plastic Products Co. also is producing polyethylene, in addition to saran with which it has been identified. A unique development in polyethylene-monofilament production is that of Reeves Bros., Inc., which is producing the fiber for its own use. It offers to sell excess production to any other users such as tape and braid manufacturers who do not compete with the broad fabrics produced by Reeves.

Carbide & Carbon Chemicals Corp. and Du Pont, the two producers of raw materials for extruding polyethylene, both feel that the new monofilament will be a keen competitor of saran. The cost per pound for polyethylene is higher than for saran yarn; but due to the former's lighter weight (see specific-gravity figures in the tabulation of properties), the yield is greater. Polyethylene, in yarn and fabric forms, can show a lower cost on a yardage basis. It, however, does not, at present, come up to saran in resistance to heat (again, see table). Reeves Bros., however, has developed a heat-stabilization process which increases the resistance of the fiber to shrink at elevated temperatures. Figures given for this property in the table are for yarn as produced—not for heat-stabilized fabric.

Multifilament saran, in commercial quantities, is not expected in the near future. Development work continues.

Celanese Corp. of America has announced a new fiber, called Celcos. Celanese described this staple as a viscose-acetate fiber. The fiber specifications and properties are reported

by the company to be "unavailable" at this time.

NEW STAPLE. In the tabulation at the right of commercial yarns and fibers available is a brief listing of Vinyon N staple. It is known that Carbide & Carbon is going into large-scale production of Vinyon N fiber. Up to now, production of synthetic fibers by Carbide has been limited to what might be termed pilot-plant production. For staple, however, initial capacity is rumored to be between one and two million pounds annually, possibly considerably more. Production of continuous-filament yarn is also being built up. Apparently, another major company, Carbide, is now seriously in the production of synthetic textile fibers. (Heretofore the interest of Carbide was mainly to produce chemicals for manufacturing yarn; now it has found that it can produce large quantities of fiber at economical cost.)

AZLONS. The Azlons present an entirely different picture from that in the 1947 tabulation. Aralac, Inc., then the principal producer, is out of the fiber business. Its plant is occupied by the Virginia-Carolina Chemical Corp., Fiber Div. Instead of the casein-protein fiber, V-C is producing a zein-protein under the trade name of Vicara. (See the subarticle which appears on the right for details of azlons not yet in large-scale production.)

The newer producer of glass-fiber yarns, Glass Fibers, Inc., will be noted at the right to be offering a greater range of yarns. Its production capacity has recently been expanded 400%. With the development of Coronizing, a heat-treating process by Fiberglas, Inc., more home-furnishing uses of glass fibers are foreseen in addition to industrial uses, which heretofore has been the major field served. Glass Fibers also has a heat-treating process especially designed to improve the bond when glass cloth is laminated.

Since the two producers of glass-fiber yarns use a description different from that of other producers, a box giving glass-fiber nomenclature is included with this revision of the fiber chart.

In addition to the one already mentioned (Aralac), other former producers of synthetic textile fibers have dropped out. The stock of yarn of Woonsocket Rayon, Inc., was sold and production discontinued. The plant was bought by Rayon Liquidating Corp. for the purpose of resuming production, if possible. United States Rayon Corp., a cuprammonium plant reported idle in the 1947 tabulation, has been dropped from the table. The Visking Corp., Preston Div., has ceased to offer saran monofilaments; but it still produces vinylidene-chloride products for fields other than the textile.

ESTRON. The new generic term for synthetic fibers made from cellulose acetate, *estron*, appears here in conjunction with the term *acetate rayon*. Both terms are being used. (Perhaps a little editorializing is not out of place here: We are in favor of, and have so testified, keeping as distinct as possible the three rayons. One need only compare the properties listed on the other side of this sheet to see the basis for our stand.)

No report on synthetic fibers is complete without mention of the expanding industrial uses of synthetic fibers. The most spectacular continues to be in tire cord. The September, 1948, issue of TEXTILE WORLD gave a broad account of these uses. Do not miss the significance of the many industrial uses foreseen for the newer synthetics: Orlon is an excellent example.

X-RAY DIAGRAMS. The use of X-ray diffraction diagrams to study textile fibers is relatively new. A series of these diagrams has been included in the fiber chart, since they give much information on the properties of textile fibers irrespective of external shape, texture, or other visual characteristics.

The diagrams vary from one another in the number, diameter, relative intensity, and width or diffuseness of the diffraction rings; the concentration of the rings into arcs; and the general or background scattering.

These different diagrams arise from the nature of the "crystalline" and "amorphous" areas which comprise the fiber and their orientation in respect to the fiber dimensions. Any X-ray fiber diagram which consists of a series of definite diffractions rings (such as those of Fortisan, Orlon, viscose rayon, or polyethylene) indicate that the fiber contains relatively large amounts of crystalline materials. Similarly, a fiber diagram consisting of one or two broad halos (such as those of azlon, Fiberglas, or cellulose acetate) indicates relatively large amounts of non-crystalline or "amorphous" substance. However, among crystalline fibers of a given chemical composition, e.g. cellulose, wide variations in the total amount of crystalline material present may occur.

In general, the number of visible diffraction rings increases and the width of these rings decreases with increasing amounts of crystalline material. These trends are apparent in the diagrams shown of Fortisan, a highly crystalline cellulose fiber, and high-tenacity rayon, a cellulose fiber of lower crystallinity. In a similar fashion, the X-ray diagrams show that Orlon contains more crystalline material than Vinyon.

The crystallized regions of fibers are usually aligned with their long axis parallel or at a small angle to the fiber axis. If most of the crystalline regions are aligned roughly parallel to the fiber axis, the diffraction rings will be concentrated in very short arcs, such as those in the diagrams of high-tenacity rayon and polyethylene. If only a few of these regions are parallel to the fiber axis, the arcs in the X-ray diagram will be longer and approach complete circles, as in the diagram of low-tenacity rayon. Actually, the principal difference between low, medium, and high tenacity rayons lies in differences in this degree of parallel orientation.

The differences in crystallinity and orientation illustrated by the X-ray diagrams are reflected in the fiber properties and, accordingly, can be used to predict properties. For example, highly crystalline fibers with good parallel crystallite orientation will have high tenacity and low elongation. Less crystalline fibers with lower degree of parallel orientation will be less strong but more extensible. Therefore, by varying crystallinity, orientation, and chemical composition, a wide variety of fibers of different properties can be made for definite end uses.

Reprints of this chart will be available, as long as the supply lasts, at 25¢ each or 15¢ each for 20 or more. Send requests to TEXTILE WORLD, 330 West 42nd Street, New York 18, N. Y.

NEW FIBERS Being Developed— Some Produced in Limited Scale

MANY NEW FIBERS, not at the time scheduled for large-scale commercial production, are constantly intriguing the textile technologist (and the sales manager). A prime example is Fiber V by Du Pont. Understandably, Du Pont is not publicizing any of the many new fiber possibilities with which it is constantly working. Fibers are added, dropped, or their properties changed. No new one is free from "bugs." Some textile men who have worked with Fiber V seem more impressed with it in staple form than in continuous filament—probably because the former does not show up irregularities so much and can be dyed more easily.

The joint efforts of American Viscose and Monsanto Chemical Co. in developing synthetic fibers are still in the research phase, according to Monsanto officials.

As for the azlons, The Drackett Corp., according to its annual report, continues to be interested but is not going ahead with commercial production. The Rubberset Co. is continuing to produce casein azlon curled staple (largely for use in mat or bat form). The staple is being tried in textile applications, while the company works out production problems so that it can offer continuous-filament azlon for textile uses. [See TW May, '49, p. 106] The Rubberset fiber is not listed in this 1949 revision since the properties of the fibers and the forms in which they will be offered are still in a state of flux.

WRAPPED YARNS. The new wrapped yarns being produced by The Tensolite Corp., of New York, may be entirely or partly synthetic, depending on the core. These yarns differ from coated ones (such as Plexon) in that they are covered by wrapping very thin, narrow tapes of thermo-plastic film around a core yarn or cord. The film is wrapped while hot and forms a continuous tube-like sheath. The core is free to move within the sheath. A monofilament tube can be produced by omitting the core. A colored film can be used, or the film can be clear so that the color of the core can shine through. Smallest size now in production is 0.012 in.; largest 0.25 in. Cores used include yarns of glass, rayon, cotton, and paper.

The regional laboratories of the U.S. Department of Agriculture are continuing their work to develop synthetic fibers based on agricultural products. Newest developments are a soluble yarn (from sodium carboxymethyl cellulose) and wool-like fiber (from cottonseed protein). The British have long been interested in soluble yarn made from seaweed: the various alginates. A variety of interesting techniques in using soluble yarns have been worked out, but production of such yarns abroad is quite limited. In the U.S., the only production is experimental.

Textile-mill men have learned that the important fibers to them are not the ones in the test tube but those in at least limited production. They have found that it pays to be among the first to develop the new uses for synthetic yarns—and that it is just as important for them to be quick to learn the techniques involved in using them.

HOW TO CONTACT FIBER PRODUCERS

Below are addresses at which the various yarn producers can be contacted:

American Bemberg Corp.
261 Fifth Ave., New York 16, N. Y.

American Enka Corp.
206 Madison Ave., New York 16, N. Y.

American Viscose Corp.
350 Fifth Ave., New York 1, N. Y.

Carbide & Carbon Chemicals Corp.
30 E. 42nd St., New York 17, N. Y.

Celanese Corp. of America
180 Madison Ave., New York 16, N. Y.

Delaware Rayon Co.
New Castle, Del.

E. I. du Pont de Nemours & Co., Inc.
Wilmington 98, Del.

Firestone Plastics Co.
350 Fifth Ave., New York 1, N. Y.

Glass Fibers, Inc.
Waterville, Ohio

Hartford Rayon Corp.
Rocky Hill, Conn.

Industrial Rayon Corp.
500 Fifth Ave., New York 18, N. Y.

Lus-Trus Extruded Plastics, Inc.
200 Hill St., Ann Arbor, Mich.

The National Plastic Products Co.
Odenton, Md.

National Rayon Corp.
1294 W. 70th St., Cleveland, Ohio

New Bedford Rayon Co.
Box 908, New Bedford, Mass.

North American Rayon Corp.
261 Fifth Ave., New York 16, N. Y.

Owens-Corning Fiberglas Corp.
Textile Products Div.
16 E. 56th St., New York 22, N. Y.

Plexon Div.,
Freydberg Bros. - Strauss, Inc.
419 Fourth Ave., New York 16, N. Y.

Reeves Bros., Inc.
54 Worth St., New York 13, N. Y.

Skenandoa Rayon Corp.
Utica 2, N. Y.

The Sunlite Mfg. Co.
1223 S. 23rd St., Milwaukee 4, Wis.

Tennessee Eastman Corp.
A. M. Tenney Associates, Inc.
10 E. 40th St., New York 16, N. Y.

Virginia-Carolina Chemical Corp.
Fiber Div., Richmond, Va.

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1949 TABLE OF COMMERCIAL S

Manufacturer	CONTINUOUS FILAMENT			
	Up to 75 den.	100 to 125 den.	150 to 200 den.	210 to 600 den.
VISCOSE RAYON				
American Enka Corp.	75/18, 75/30 75/45	100/40, 100/60 100/100, 125/40	150/40, 150/90	250/60, 300/60
American Viscose Corp.	50/20, 75/30 75/45	100/40, 100/60	150/40, 150/60 150/90	250/120, 300/44 300/60, 300/120 300/234, 450/100
Celanese Corp. of Amer. (Rayon Div.)	75/30	100/40, 100/60	150/40, 150/90	
Delaware Rayon Co.		100/24, 100/44 100/60	150/24, 150/44 150/60, 150/90 200/30, 200/60 200/90	250/120*ho* 275/120*ho* 300/44, 300/60 300/120*ho*
E. I. du Pont de Nemours & Co., Inc.	50/20, 75/30	100/40, 100/60 125/50	150/60*m*, 150/40 150/90, 200/80 200/55	250/50, 250/120*ho* 300/50, 300/120*m* 450/72, 450/100
Hartford Rayon Corp.				300/44, 360/1 450/66
Industrial Rayon Corp.	75/30	100/40, 100/60	150/40*m*	250/60, 300/44 300/80, 450/60
National Rayon Corp.			150/50	
New Bedford Rayon Co.			150/40	
North American Rayon Corp.	75/30	100/60, 125/42 125/52	150/42, 150/100	250/60*m*, 300/75*m* 450/75
Skenandoa Rayon Corp.		100/40, 100/60 100/125	150/40, 150/90 150/200	
ACETATE RAYON (*Estron*)				
American Viscose Corp.	45/14, 55/14 75/20	100/28, 120/32 120/36	150/41, 200/60	300/80
Celanese Corp. of Amer.	30/40*t*, 40/60*t* 45/13, 55/15, 60/80*t* 75/20, 75/50	90/120*t*, 100/26 100/40, 120/40	150/40, 150/180*t* 200/52	270/360*t*, 300/80 450/120
E. I. du Pont de Nemours & Co., Inc.	55/18, 75/24 75/50	100/32, 100/40 100/66, 120/40	150/40	200/64, 300/80 450/120
Tennessee Eastman Corp.	45/11, 55/13 55/20, 75/19 75/34, 75/49	100/25, 100/34 120/30, 120/40	150/38, 150/52 200/68	300/75, 450/114
CUPRAMMONIUM RAYON				
American Bemberg Corp.	40/30, 50/36 65/45, 75/60	100/74	150/120	
NYLON				
E. I. du Pont de Nemours & Co., Inc.	10/3, 15/1, 20/1 20/7, 20/20, 30/10 40/13, 40/34, 50/1 50/17, 70/34	100/34		210/34, 260/17
ACRYLIC RESIN				
E. I. du Pont de Nemours & Co., Inc.		100/40	200/80	400/160
VINYL RESINS				

SYNTHETIC YARNS AND FIBERS

600 den. and up.	Trade-names
1100/480*ho* 1650/720*ho*	Enka Rayon, Briglo, Perlglo, Englo, Tempra(*ho*)
600/100, 1100/490*ho* 1150/490*m*, 1500/150 1650/980, 1900/980 2200/980	Avisco Dull, Avisco Semi-Dull, Avisco Medium-Strength(*mo*) Avisco Tire Yarn
	Tubize Rayon
600/16, 1200/33	Delray, Delragal
600/96, 900/50 900/144 1100/480*ho* 1650/720*ho* 2200/960*ho*	Du Pont Rayon, Cordura (*ho*) (Lusters produced: bright, dull, semi-dull)
600/20, 600/88 900/66	Fetheray, Belastraw, Crystalon
1100/480*ho* 1650/720*ho*	Dul-tone, Spunlo, Premier, Tyron(*ho*)
	Newdull, Nubray
600/92, 1100/480*ho*	Narco, Hi-Narco(*mo*), Super Narco(*ho*), Xtra-Dul
	Skenandoa Rayon, Veri Dul
	Avisco Acetate
600/160	Celanese, Fortisan(r)
	Acele
	Koda
	Bemberg, Matesa
840/140	Nylon (generic)
	Orlon

STAPLE

Manufacturer	Deniers and Lengths (*Deniers given first in units and decimals followed by lengths in inches and fractions.*)
VISCOSE RAYON	
American Viscose Corp.	Avisco Bright Regular: 1.5-1, 1.5-1 9/16, 1.5-2, 1.5-4½, 3-1 9/16, 5.5-1½ to 2¼, 5.5-3½ to 6, 5.5-5 to 7. Avisco Bright Crimped: 1.5-1 9/16, 3-1½ to 2¼, 5.5-1 9/16, 5.5-2, 5.5-1½ to 2¼. Avisco Dull Regular: 1.5-1 9/16, 1.5-2, 3-1 9/16, 3-2, 3-2½, 5.5-2, 5.5-3½ to 6. Avisco Dull Crimped: 1.25-2¼, 1.5-1 9/16, 3-1 9/16, 3-2, 5.5-3½ to 6. Avisco Extra-Strength Bright: 1-1 9/16, 1.25-1¾, 1.5-1 9/16, 1.5-2.
E. I. du Pont de Nemours & Co.	Bright: 1.5-1½, 3-1½, 5.5-1, 5.5-2. Dull: 1.5-1½, 3-1½, 3-2, 3-2½, 3-4, 5.5-2 5.5-2½, 5.5-4.
ACETATE RAYON (Estron)	
Celanese Corp. of Amer.	Celanese Lanese. 2, 3, 5.5, 8, 12, 15, and 20 den. bright and dull. All lengths.
E. I. du Pont de Nemours & Co.	Acele Dull: cut to length for spinning system.
Tennessee Eastman Corp.	Teca Bright, Dull: 2, 3, 5, 8, 12, 16, and 20 den. cut to length for spinning system to be used.
ACETATE-VISCOSE RAYON	
Celanese Corp. of Amer.	Celanese Celcos: variety of deniers and lengths.
NYLON	
E. I. du Pont de Nemours & Co.	Bright: 1.5, 3, 6, 10, and 15 den. Semi-dull: 1.5, 3, and 6 den. Cut to length for spinning system.
VINYL RESINS	
American Viscose Corp.	Vinyon HH: 3 to 5 den., 1 to 5 in. oriented and unoriented.
Carbide & Carbon Chemicals Corp.	Semi-dull: 2, 3, 6, 12, and 24 den. in any length from 1 to 10 in.
GLASS	
Owens-Corning Fiberglas Corp.	Designations are for yarns given in Fiberglas designations (in parentheses are equivalent cotton counts, but Fiberglas yarn diameters are much smaller than cotton for equivalent counts).

Synthetic-YARN CONSUMPTION Lets Up in 1949

HIGHLIGHTS: Record production of rayon filament yarn and staple reached 1,124,300,000 lb. in 1948 — Decline in textile activity affects synthetic-yarn consumption somewhat less than that of other basic fibers — Dip in U. S. market hurts 1949 imports while world-wide dollar shortage curtails exports — Increased foreign production boosts world total.

By RICHARD C. SCOTT, *Assistant Editor, TEXTILE WORLD*

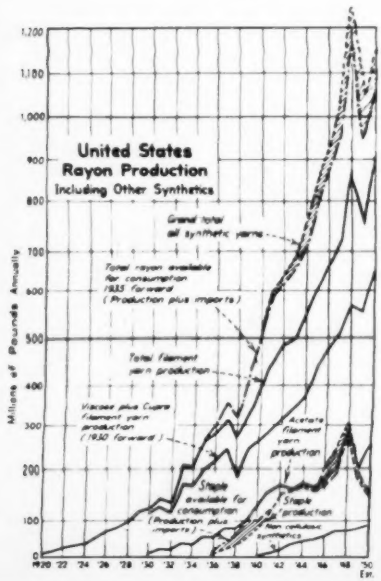
THE YEAR 1949 has brought about a return to a normal rise-and-dip economy; supply has overtaken demand after years of shortages and high prices. But although domestic supply lines are filled again, synthetic yarns are in a very favorable position. Generally, wages remain high, synthetic yarn and fabric demand continues relatively strong, and synthetic-yarn producers are still expanding productive capacity.

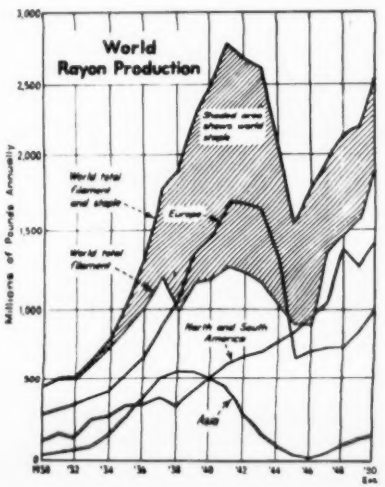
The accompanying tables were compiled from figures furnished by *Rayon Organon,* the Bureau of Labor Statistics, the Dept. of Commerce, and the Dept. of Agriculture. Both domestic and international textile and general business trends have been considered in the forecasts (shown as *estimates* in the accompanying tables) for the balance of 1949 and through 1950. In general, the slowing down in textiles is expected to have been counteracted by brisker demand at the end of 1949; and demand is expected to continue on through 1950.

High-tenacity yarns continue strong. Totaling only 6% of total viscose and cuprammonium production in 1941, they came close to 50% of all viscose and cuprammonium filament produced in 1949. (Actually, there is no high-tenacity cuprammonium yarn, but production figures furnished to TEXTILE WORLD of viscose and cuprammonium are combined so as not to reveal cuprammonium production, which is relatively small and made by only one firm.)

Rayon is now second only to cotton in pounds produced. Prices were reduced about 5% in 1949, so that today rayon-staple yarns are still sold more cheaply than comparable cotton yarns. Filament rayon is continuing toward a taking over of the former cotton tire-cord market.

Domestic, if not foreign, orders for synthetic yarns remain plentiful in this period of economic readjustment. As a result, producers look forward to the future with confidence.


United States
Rayon Production
Including Other Synthetics
Millions of Pounds Annually
Grand total all synthetic yarns
Total rayon available for consumption 1935 forward (Production plus imports)
Total filament yarn production
Viscose plus Cuprammonium filament yarn production (1930 forward)
Acetate filament yarn production
Staple available for consumption (Production plus imports)
Staple production from cellulosic synthetics



PRODUCTION

U.S. RAYON PRODUCTION*

Since 1920

	Filament Yarn: Viscose + Cupra	Filament Yarn: Acetate	Staple & Tow: Viscose	Staple & Tow: Acetate	TOTAL
1920	10.0	0.1			10.1
1922	24.0	0.1			24.1
1924	36.2	0.1			36.3
1926	60.1	2.6			62.7
1928	91.2	6.0	0.2		97.4
1930	117.5	9.8	0.4		127.7
1932	116.4	18.3	1.1		135.8
1934	170.3	38.0	2.2		210.5
1936	214.9	62.7	9.8	2.5	289.9
1938	181.5	76.1	26.4	3.5	287.5
1940	257.1	133.0	70.6	10.5	471.2
1942	310.5	168.8	127.6	25.7	632.6
1944	383.5	171.7	128.4	40.3	723.9
1946	491.2	186.3	132.7	43.7	853.9
1948	562.3	293.8	184.5	83.7	1,124.3
1949 (est)	550.0	200.0	120.0	60.0	930.0
1950 (est)	650.0	250.0	100.0	50.0	1,050.0

*millions of pounds.

U.S. RAYON PRODUCTIVE CAPACITY*

100% Potential

	Filament Yarn: Viscose + Cupra	Filament Yarn: Acetate	Staple Yarn: Viscose	Staple Yarn: Acetate	TOTAL
1945	449	175	129	39	792
1946	491	186	133	44	854
1947	525	222	168	60	975
Nov., 1948	590	316	184	72	1,162
Jul., 1949	617	349	185	105	1,246
Mar., 1950 (est)	618	349	182	105	1,254
Oct., 1950 (est)	618	349	182	105	1,254

*millions of pounds.

U.S. RAYON, NYLON, SILK BROAD WOVEN GOODS PRODUCED*

	100% Filament Rayon	100% Spun Rayon	Filament & Spun Rayon	Rayon Mixtures & Blends*	Nylon, Silk, Etc.	TOTAL
1937	713	55	67	68	128	1,031
1939	997	177	23	144	69	1,410
1941	1,230	218	80	127	55	1,710
1943	1,090	175	184	169	79	1,657
1945	1,026	162	159	210	67	1,624
1947	1,207	295	182	249	59	1,992
1948	1,339	375	257	220	88	2,279
1949 (est)	1,250	300	250	225	120	2,145
1950 (est)	1,500	275	250	200	180	2,405

*millions of linear yards.
—includes velvets, upholstery, tie fabrics (51% and more rayon).

CONSUMPTION

U.S. FIBER CONSUMPTION*

(Includes Imports for Consumption)

	Cotton	Wool	Rayon	Other Synthetic	Silk
1930	2,610.9	263.2	118.8		75.7
1935	2,754.7	417.5	259.1		62.3
1940	3,953.6	407.9	482.0	5.0	35.8
1945	4,511.3	645.1	769.9	52.0	0.5
1946	4,906.6	748.3	875.5	56.0	6.5
1947	4,763.5	708.3	987.9	50.0	2.0
1948	4,540.5	784.7	1,149.4	74.0	7.4
1949 (est)	4,000.0	550.0	950.0	85.0	4.0
1950 (est)	4,300.0	625.0	1,100.0	100.0	5.0

*millions of pounds.

MONTHLY AVERAGE U.S. RAYON CONSUMPTION*

Compared with other fibers

	Rayon	Wool	Cotton
1945	64.0	53.8	375.9
1946	70.1	62.4	408.9
1947	79.3	59.1	397.0
1948	91.7	58.7	378.4
1949 (est)	65.0	46.0	335.0
1950 (est)	85.0	52.0	360.0

*millions of pounds.

U.S. SYNTHETIC-FIBER CONSUMPTION OTHER THAN RAYON*

	Filament Yarn	Staple	Total
1940	3.8	0.7	4.5
1941	9.7	1.9	11.6
1942	18.7	5.0	23.7
1943	31.3	5.9	37.2
1944	39.6	6.7	46.3
1945	42.9	6.4	49.3
1946	42.7	10.6	53.3
1947	45.3	3.5	48.8
1948	65.8	4.9	70.7
1949 (est)	75.0	2.0	77.0
1950 (est)	90.0	2.5	92.5

*millions of pounds of nylon, glass fiber, casein fiber, zein fiber, and synthetic-resin fibers (Vinyon and saran).

U.S. CIVILIAN PER-CAPITA FIBER CONSUMPTION*

	Cotton	Rayon	Wool	Total
1936-1940	25.2	3.0	2.8	31.0
1941-1945	24.8	4.3	3.1	32.2
1946	30.9	6.0	5.3	42.2
1947	26.9	6.3	4.9	38.1
1948	27.5	7.6	4.9	40.0
1949 (est)	26.3	6.3	3.7	36.3
1950 (est)	28.0	7.1	4.2	39.3

*pounds per person net.

RAW-MATERIAL PRICES

RAW MATERIAL PRICES*

Annual Average

	1½-den., 1½-in. bright Viscose Staple Average	Cotton 10-Mkt. Average	Fine combing territory grade Wool (Scoured Basis)
1945	25.0	22.6	117.7
1946	25.4	30.6	102.6
1947	31.9	34.4	121.6
1948	36.4	33.8	158.5
1949 (est)	35.0	33.0	180.0

*cents per pound.

YARN PRICES

YARN PRICES*

Annual Average

	Rayon 150-d. Viscose Filament	Spun 30/1	Cotton Combed 30/1	Worsted Bradf'd 2/32
1945	55.0	..	57.8	..
1946	55.9	..	68.8	..
1947	66.9	88.2	88.5	284.5
1948	75.2	89.8	95.3	346.2
1949 (est)	74.0	75.0	78.0	367.0

*cents per pound.

...N TRADE

...PORTS*

	Synthetic Yarns Filament	Staple
	0.2	..
	..	..
	0.3	36.0
	10.1	38.6
	1.0	10.0
	2.0	8.0

...ns of pounds.

...PORTS*

	All Synthetic Yarns
	1.7
	22.7
	28.5
	17.4
	9.0
	5.0

...ons of pounds.

...ON PRODUCTION*

...ament ...arn	Staple	Total
186	1,285	2,471
265	1,552	2,817
196	1,452	2,648
150	1,390	2,540
130	1,050	2,080
897	501	1,398
201	573	1,674
211	680	1,991
495	635	2,130
580	610	2,190
900	655	2,555

...ons of pounds.

...ON PRODUCTION*

...Staple	1949 Estimate Filament	1949 Estimate Staple	1950 Estimate Filament	1950 Estimate Staple
264	750	180	900	150
24	250	35	300	50
312	500	350	600	400
35	78	43	95	50
	2	2	5	5
635	1,580	610	1,900	655

...ons of pounds.

...S' EARNINGS

...EEKLY EARNINGS* ...WAGE EARNERS

Silk & Rayon Manufac- turers	Cotton Manufac- turers	Wool Manufac- turers
30.82	28.20	36.27
36.09	33.10	41.57
42.36	38.83	45.90
49.38	42.36	51.67
44.00	40.00	48.00

*dollars.

PRODUCTION OF ITEMS MADE FROM RAYON

In first quarter of years 1944 to 1949

BROAD-WOVEN GOODS (millions of linear yards)	1944 (1st quarter)	1945 (1st quarter)	1946 (1st quarter)	1947 (1st quarter)	1948 (1st quarter)	1949 (1st quarter)
100% filament-rayon fabrics	294.5	275.9	269.0	287.7	344.0	333.6
Bright viscose taffetas	12.7	9.6	15.0	11.2	14.1	8.2
Pigment viscose taffetas	22.5	21.6	22.4	20.2	34.5	35.2
Acetate taffetas	23.3	21.4	21.5	18.3	22.8	36.4
Cross-dyed taffetas	5.3	5.1	6.8	4.1	2.9	3.4
Twills	34.9	29.2	29.0	38.6	44.7	43.2
Satins	38.5	40.8	39.0	45.6	42.5	46.8
Flat and Canton crepes and failles	22.1	19.2	22.1	23.1	34.3	37.6
French crepes	19.6	21.7	23.2	29.1	33.0	34.3
Marquisettes	10.6	11.1	12.1	15.2	12.7	14.8
Ninon and voiles	9.5	9.5	11.0	11.3	8.6	6.2
All others	89.3	80.5	55.7	69.3	93.4	67.5
100% spun-rayon fabrics	42.6	44.0	49.9	50.9	102.4	77.6
Poplins, challis, and bedford cords	7.6	7.6	7.0	4.7	11.3	14.7
Twills, serges, etc.	16.0	14.7	10.3	8.0	26.5	30.3
Linen-type flakes	5.9	7.0	7.6	5.3	8.2	5.0
Plied-yarn fabrics	4.8	4.9	7.1	14.6	18.4	9.6
All others	8.1	9.6	17.7	18.2	38.0	18.0
Filament and spun-rayon fabrics	38.0	40.8	46.8	48.3	54.7	50.7
Fujis	11.3	14.1	17.0	16.9	12.5	9.0
Shantungs	7.4	7.6	6.6	6.2	7.5	8.7
All others	19.2	20.0	23.2	25.1	34.7	33.0
Mixture (51% or more rayon)	37.4	40.9	57.5	63.8	39.7	34.2
Rayon and wool	6.3	6.6	7.6	10.3	9.1	7.3
Rayon and cotton	23.2	22.1	36.1	40.1	26.3	21.9
Rayon and other fibers	7.9	12.1	13.8	13.3	4.3	5.0
Pile, upholstery, drapery, and tie fabrics	7.0	8.1	10.2	11.9	12.4	9.1
Estimate to cover mills not reporting	2.9	0.5				
Total rayon broad-woven goods	422.6	416.4	433.5	462.5	553.2	505.3
Nylon, glass, and other fibers	24.0	6.0	5.4	17.8	16.8	28.3
KNIT GOODS (millions of dozens)						
Women's full-fash. hosiery (doz. pr.) rayon	8.8	9.1	3.3	2.0	0.4	0.05
Women's full-fash. hosiery (doz. pr.) nylon			6.3	7.3	10.1	10.3
Women's seamless hosiery (doz. pr.) rayon	1.8	1.0	0.9	1.0	0.5	0.4
Women's seamless hosiery (doz. pr.) nylon			0.5	0.8	1.1	1.0
Half-hose and slack socks	12.2	12.7	11.8	12.0	12.2	9.9

CONSUMPTION OF RAYON

Filament, except where specified under broad-woven goods

(millions of pounds)	1944 (1st quarter)	1945 (1st quarter)	1946 (1st quarter)	1947 (1st quarter)	1948 (1st quarter)	1949 (1st quarter)
Broad-woven goods--						
Filament	74.6	72.3	82.7	90.2	105.5	98.7
Spun		25.7	29.8	31.8		
Blends and mixtures		4.8	10.2	7.7		
Tire cord and fabric	21.1	43.0	53.6	56.4	58.8	67.0
Narrow-woven goods	3.6	4.3	3.1	3.3	3.6	2.8
Miscellaneous uses	5.3	3.5	2.8	4.3	3.6	3.7
Exports	2.6	5.7	3.3	3.5	4.4	3.9
Hosiery --full-fashioned	8.0	6.9	2.1	1.2		
--seamless	3.6	2.7	3.9	4.4		
Other knit goods --circular	7.2	7.0	8.1	9.3	9.8	8.3
--warp knit	7.0	6.6	8.4	9.7	12.1	8.7

Figures are from WPB, CPA, "Rayon Organon," Dept. of Commerce.

American Viscose Corp.	45/54*ho*	120/162*ho*	200/270*ho*	250/216*mo*
Carbide & Carbon Chemicals Corp.		100/60	140/120 200/200 (*Stretched only*)	250/240, 270/240 500/200
GLASS				
Owens-Corning Fiberglas Corp.	900-1/0	900-1/2 450-1/0	450-1/2 450-2/0 225-1/0	450-1/3, 450-2/2 450-3/0, 450-4/0 225-1/2, 225-2/0 150-1/0
Glass Fibers, Inc.		450-1/0	450-1/2 450-2/0 300-1/0 225-1/0	450-1/3, 450-2/2 450-3/0, 450-4/0 300-1/2, 300-1/3 225-1/2, 225-2/0 150-1/0
VINYLIDENE CHLORIDE (Saran)				
Firestone Plastics Co.	Monofilaments in diameters of 0.005, 0.008, 0.01, 0.012, 0.015, 0.02, and larger up to 0.08 in. Also			
Lus-Trus Extruded Plastics, Inc.	Monofilaments in diameters of 0.008, 0.01, 0.012, 0.015, 0.02, and larger up to 0.05 in. Also rattan-			
The National Plastic Products Co.	Monofilaments in diameters of 0.005 to 0.05 in. Also rattan-like strips. 64 standard colors.			
The Sunlite Mfg. Co.	Monofilaments in diameters of 0.01, 0.012, 0.015, 0.02, 0.03 in. (and up).			
POLYETHYLENE				
American Viscose Corp.	Monofilaments in diameters of 0.01 to 0.05 in.			
The National Plastic Products Co.	Monofilaments in diameter of 0.012 in. (others on request).			
Reeves Bros., Inc.	Monofilaments in diameter of 0.012 in. Also rattan-like strips.			
PLEXON				
Plexon Div., Freydberg Bros.-Strauss, Inc.	Variety of base yarns and 21 coating formulas in approximately 120 colors. Standard sizes: 0.015, 0.02, 0.03, 0.045, 0.065 in.			

mo Medium-tenacity only. *m* Medium-tenacity and regular.
ho High-tenacity only. *h* High-tenacity and regular.

GLASS-FIBER N

	Continuous filament	
Definition	An assemblage of continuous glass filaments, limited in length only by logical package size and further processing operations, twisted, and/or plied into balanced yarns.	An assemblag attenuated, twi
Filament designation	*First letter*: indicates glass composition. Type "E" (electrical) is most suitable for high temperature and electrical applications. *Second letter*: "C" indicates the fiber is continuous. *Third letter*: indicates filament diameter (in inches) according to the following designations: "D" 0.00021 to 0.00025 in. "E" 0.00026 to 0.00030 in. "F" 0.00031 to 0.00035 in. "G" 0.00036 to 0.00040 in.	*First letter*: in most suitable f *Second letter*: *Third letter*: the following
Strand number	The numbers 900, 450, 300, 225, 150 represent 1/100 of the yardage of raw glass strands per pound. (900 yarns have 102 filaments per strand. All other yarns have 204 filaments per strand.)	The numbers staple yarn per
Yarn construction	Plies in continuous-filament glass yarns are designated by two digits following the strand number. First digit shows number of original strands twisted; the second, the number of these yarns plied. Total number of strands is product of both digits. (0 is multiplied as 1.)	Plies in spun- those indicatin dicated by the forced with or glass yarn.
Yards per pound	Determined, basically, by multiplying the first number by 100 and dividing by the total number of strands.	Determined, b dividing by the

	Vinyon HH, Vinyon ST, Vinyon HST,[b]
	Vinyon N
450-3/2, 450-3/3 450-3/5, 450-4/3 450-4/5, 225-1/3 225-2/2, 225-3/0 225-3/2, 225-3/3 225-4/3, 150-1/2 150-1/3, 150-2/2 150-3/2, 150-3/3 150-3/4	Fiberglas
450-3/2, 450-3/3 450-3/5, 450-4/3 450-4/5, 300-2/2 300-3/2, 225-1/3 225-2/2, 225-3/0 225-3/2, 225-3/3 225-4/3, 150-1/2 150-1/3, 150-2/2 150-3/2, 150-3/3 150-3/4	Vitron
rattan-like strips.	Velon
like strips.	Saran (generic)
	Saran (generic)
	Saran (generic)
	Avisco PE
	Wynene
	Reevon
	Plexon
Saponified.	

	Type CSE: 44 2R (2.6), 25 2 (1.5), 12.5 2 (0.77), 12.5 1 (1.5), 50 2 (3.0). Type ESE: 70 2R (4.2), 40 2R (2.4), 25 2 (1.5), 31 2 (1.8).
AZLON	
Virginia-Carolina Chemical Corp.	2, 3, and 4 den. staple (16, 20, and 23 microns) in lengths from ½ to 6 in. as specified.

CONTINUOUS-FILAMENT TOW

Manufacturer	Luster, Deniers, and Sizes
VISCOSE RAYON	
American Viscose Corp.	Avisco Bright and Dull: 1.5 den., 190,000 total den. 1.5 den., 245,000 total den. 3.0 den., 190,000 total den. 3.0 den., 245,000 total den. 5.5 den., 190,000 total den. 5.5 den., 245,000 total den. 10.0 den., 245,000 total den. Experimental types: 1.0 den., 245,000 total den. 20.0 den., 245,000 total den.
E. I. du Pont de Nemours & Co.	Bright: 1.5 den., type 29, 4,400 total den.
ACETATE RAYON	
Celanese Corp. of Amer.	Bright and dull Celatow: 3 and 5.5 den. 90,000, 120,000, and 150,000 total den. on ball warps.
NYLON	
E. I. du Pont de Nemours & Co.	Bright: 1.5, 3, 6, 10, and 15 den. per filament. Semi-dull: 1.5, 3, and 6 den. per filament.

OMENCLATURE

Staple	Examples
of fibers of 9-in. average length which is ted, and/or plied into balanced yarns.	Continuous filament ECD 450-4/3 is made of electrical glass continuous filament of 0.00021 to 0.00025 in. in size, 204 filaments per strand, nominal yardage of 45,000 yd. per lb. of single-strand fiber (450 x 100) and is made up of 12 strands (3 plies each consisting of 4 strands). Yardage of 450-4/3 is therefore 3,750 yd. per lb. (45,000 divided by 12).
dicates glass composition. Type "C" (chemical) is or acid and alkali resistance. 'S" indicates the fiber is staple. dicates filament diameter (in inches) according to esignations: "E" 0.00026 to 0.00030 in. "G" 0.00036 to 0.00040 in.	
25, 50, 75, etc., represent 1/100 of the yardage of pound.	Staple CSE 10/2 is made of chemical glass staple; filament size is 0.00026 to 0.00038 in.; nominal yardage is 1,000 yd. per lb. of individual strands or slivers (10 x 100) and is made up of 2 plies. Yardage of 10/2 is therefore 500 yd. per lb. (1,000 divided by 2).
staple yarns are designated by a number following g yards per pound. In certain constructions, as in- letter "R" after the ply number, the yarn is rein- e end of ECD 450-1/0 or an equivalent continuous	
sically, by multiplying the first number by 100 and number of plies.	

1949 Revision TEXT

RAYON

VISCOSE

ACETATE

ESTRON

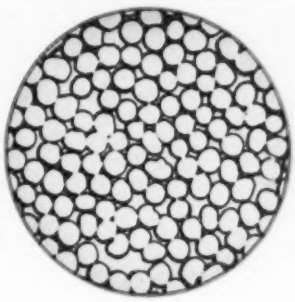
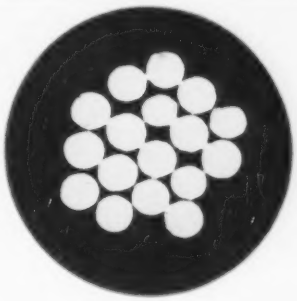
Microscopic Appearance

These cross-sections not only tell much concerning some properties of the fiber but are often useful for identifications. Not all photographs are the same magnification due to differences in filament sizes.

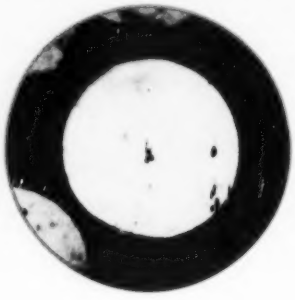
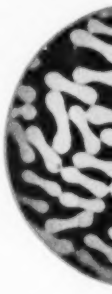
The viscose, acetate, cupra, and vinylidene chloride cross-sections are courtesy of the Southern Regional Research Laboratory.

		VISCOSE			ACETATE			
		Regular	*Med. Tenacity*	*High Tenacity*	*Regular*	*Saponified*	*High Elongation*	
Tensile Strength (g.p.d.) (Std. is 70° F. at 65% r.h.)	Std.	1.5 to 2.4	2.4 to 3.0	3.0 to 4.6	1.3 to 1.5	7.0	1.3 to 1.6	
	Wet	0.7 to 1.2	1.2 to 1.7	1.9 to 3.0	0.8 to 1.2	6.0	0.86 to 0.97	
	Std. Loop	1.0 to 1.5	1.5 to 1.8	1.8 to 2.1	0.9 to 1.3			
	Std. Knot	0.7 to 1.4	1.4 to 1.7	1.7 to 2.0	0.9 to 1.3			
Elongation (%) (Std. is 70° F. at 65% r.h.)	Std.	15 to 30	12 to 20	9 to 17	23 to 30	6.0 to 6.5	45 to 50	
	Wet	20 to 35	17 to 30	14 to 20	30 to 40		60 to 70	
Elastic Recovery (%)		30 to 74 at 4% 58 at 14%	97 at 2%	70 to 100 at 2%	48 to 65 at 4% 29 at 14%	100 at 20% 60 at 40%		
Tensile Stress (psi.)		29,000 to 46,000	46,000 to 58,000	58,000 to 88,500	22,000 to 28,000	136,000	22,000	
Average Stiffness (g.p.d.)		11.1	16.6	25.5	5.5	116.6	3.3	
Average Toughness $\frac{g.cm.}{d.cm.}$		0.19	0.21	0.22	0.17	0.21	0.35	
Specific Gravity		1.5 to 1.52			1.32	1.5	1.3	
Regain (Adsorption)		13% at 70° F. and 65% r. h.; 11% is commercial standard.			6% at 70° F. and 65% r.h.; 6.5% is commercial std.	9.8%	6%	
Water Absorbency		27 at 95%; total retention: 100 to 125%.			14% at 95% r.h.	20% at 95% r.h.	14% at 95% r.h.	
Effect of Heat		Loses strength above 300° F. Decomposes at 350 to 400° F.; does not melt; burns relatively rapidly.			Regular and high elongation are thermoplastic; lose strength above 200 to 220° F.; soften at 400 to 445° F.; fuse at 500° F.; sticking point 350 to 375° F.; burn relatively slowly. Saponified is more nearly like viscose rayon.			
Effect of Age		Slight.			Slight on tensile; none on color.			
Effect of Sunlight		Loses tensile strength after prolonged exposure, very little discoloration.			Slight on tensile; none on color.			

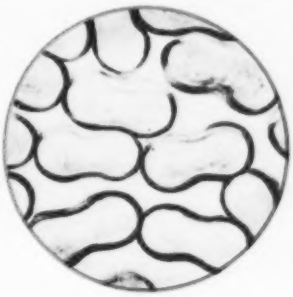
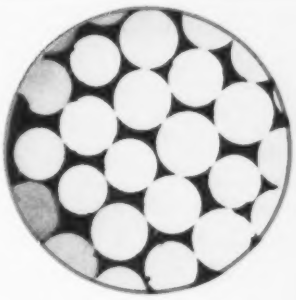
XTILE WORLD'S SY

	CUPRA CUPRAMMONIUM	NYLON		VINYLID CHLORI SARAN
				
ngation		*Regular*	*High Tenacity*	
1.6	1.7 to 2.3	4.5 to 5.5	6.0 to 7.5	1.4 to 2.3
0.97	0.95 to 1.25	3.5 to 4.7	4.8 to 6.4	1.4 to 2.3
	1.0 to 1.5	3.9 to 4.6	4.6 to 5.2	0.7 to 1.5
	0.7 to 1.4	3.8 to 4.7	4.7 to 5.4	0.6 to 1.5
50	10 to 17	20 to 25	14 to 20	15 to 25 (unoriented) 20 to 30 (oriented)
70	17 to 33	21 to 30		20 to 30
	17% to 75%	100% at 8% 91% at 6%		95% (slow)
000	33,000 to 44,500	65,000 to 80,000	87,000 to 110,000	15,000 to 45,000 (oriented)
3	15.5	24	45	20
35	0.14	0.5	0.45	0.62
3	1.52 to 1.54	1.14	1.14	1.68 to 1.75
6%	12.5% at 70° F. and 65 r. h.; 11% is commercial standard.	3.8% at 70° F. and 65% r.h.; 4.5% is commercial standard.		None.
95% r.h.	27% at 95%; total retention: 100 to 125%.	6.1% at 95% r.h.		Less than 0.1% (surface).
stic: at oint on-	Decomposes at about 300° F.; burns relatively rapidly.	Melts at 482° F.; yellows slightly at 300° F. when held for 5 hr.; damaged at 446° F.		Softening point 240 to 280° F.; s
	Slight.	Virtually none.		None.
	Loses strength on prolonged exposure.	Prolonged exposure decreases tensile strength.		Darkens slightly.

YNTHETIC-F

ENE DE	POLYETHYLENE	ACRYLIC RESIN ORLON *Trade-mark of E. I. du Pont de Nemours & Co., Inc.*	VI *Trade-mark of Carbi*
			
			Regular (ST)
	1.0 to 2.5	4.0 to 5.0	2 to 2.8
	1.0 to 2.5	3.6 to 4.5	2 to 2.8
		3.3 to 3.7	
		2.6 to 3.3	
	20 to 60	16 to 21	20 to 35
	20 to 60	16 to 22	20 to 35
	90 to 95% at 5% (slow)	97 at 2% (instant) 84 at 4% (instant)	90% at 80% load.
	11,000 to 30,000	59,000 to 74,000	34,000 to 47,000
	2 to 12	24	7.7
	0.3	0.61	3.3
	0.92	1.17	1.33 to 1.35
	None.	0.9% at 60% r.h.	0.0 to 0.5%
	Less than 0.01%.	2% at 95% r.h. (78° F.)	0.1%
lf-extinguishing.	5% shrinkage at 165° F.; melts at 220° F.; slow burning.	Sticking point 455° F. (Copper-block method). Retains 100% strength after 32 days in air at 257° F.	Melts at 260° F.; 150° F.; softe support combus
	Slight.	Virtually none.	None.
	Slight.	Very resistant to degradation by ultraviolet light and atmosphere.	None.

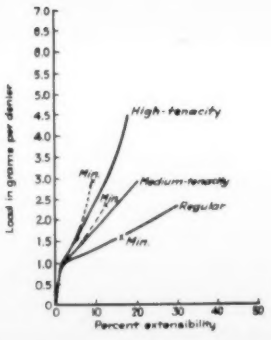
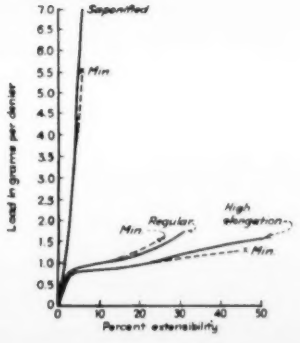
-FIBER TAB

	VINYL RESINS				GLASS
	VINYON *de-mark of Carbide & Carbon Chemical Corp.*		**VINYON N** *Trade-mark of Carbide & Carbon Chemical Corp.*		
					
	ular (ST)	*High Tenacity (HST)*	*Unstretched Staple (HH)*	*Stretched*	*Stabilized Type R*	
	o 2.8	3.5 to 4	0.7 to 1.0	3.5 to 4.5	2.8 to 3.8	6.3 to 6.9
	o 2.8	3.5 to 4	0.7 to 1.0	4.2 to 4.5	3.6 to 3.8	5.4 to 5.8
						1.0 to 1.4
						2.0 to 4.0
	to 35	18 to 20	100 to 120	9.0 to 11.0	20 to 30	3 to 4
	to 35	18 to 20	100 to 120	8.5 to 9.5	25 to 28	2.5 to 3.5
	80% load.			76% at 1.5 g.p.d.	100% at 0.5 g.p.d.	100%
	to 47,000	60,000 to 68,000	12,000 to 17,000	75,000	64,000	204,000 to 220,000
	7.7	2.4		49	13	322
	3.3	2.7		0.2	0.48	0.07
	.33 to 1.35			1.22 to 1.28		2.54
	.0 to 0.5%			0.0 to 0.5%		None.
	.1%			Close to 1% at up to 95% r.h.		Up to 0.3% (surface).
	lelts at 260° F.; becomes tacky and shrinks at 150° F.; softens at about 170° F.; will not support combustion.			Will not support combusion. Stretched shrinks above 157° F.; stabilized, above 275° F. Stretched fuses at 338° F.		Will not burn; strength begins to decrease at 600° F. and continues to decline to limiting temperature of about 1,000 to 1,500° F.; softens at 1,500° F.
	lone.			Virtually none.		None.
	lone.			Darkens somewhat after prolonged exposure with some loss in tensile strength.		None.

BLE

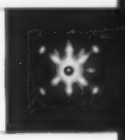
Compiled by C. W. BENDIGO, Editor

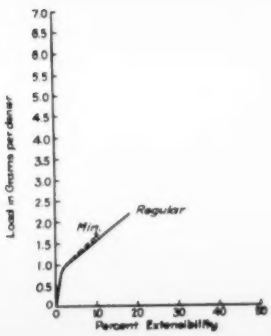
AZLON	PLEXON *Trade-mark of Freydberg Bros.-Strauss*	
 Zein type		**Microscopic Appearance** ***These cross-sections not only tell much concerning some properties of the fiber but are often useful for identifications. Not all photographs are the same magnification due to differences in filament sizes.*** *The viscose, acetate, cupra, and vinylidene chloride cross-sections are courtesy of the Southern Regional Research Laboratory.*
1.1 to 1.2	1.5 to 3.0	*Std.*
0.53 to 0.57	1.3 to 2.5	*Wet* **Tensile Strength (g.p.d.)**
		Std. Loop (*Std. is 70° F. at 65% r.h.*)
		Std. Knot
30 to 35	Varies with base.	*Std.* **Elongation (%)**
30 to 40	Generally high.	*Wet* (*Std. is 70° F. at 65% r.h.*)
99.5% at 4% (dry) 90% at 20% (wet)	Varies with base.	**Elastic Recovery (%)**
17,600 to 19,200	Generally high.	**Tensile Stress (psi.)**
2.8		**Average Stiffness (g.p.d.)**
0.18		**Average Toughness** $\frac{g.cm.}{d.cm.}$
1.25		**Specific Gravity**
10%	2 to 5% at 70° F. and 65% r.h.	**Regain (Adsorption)**
64% (cross section increases 20%)	Low.	**Water Absorbency**
Up to 350° F., no effect; loss in strength above; melts at 470 to 475° F.	Non-inflammable to self-extinguishing (depending on coating); decomposes at 250 to 400° F. (depending on coating).	**Effect of Heat**
None.	Slight.	**Effect of Age**
Very slow deterioration and loss of strength.	Slight.	**Effect of Sunlight**

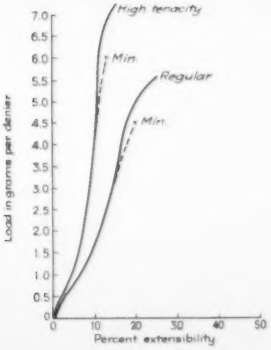
Effect of Acids	Similar to cotton; hot dilute or cold concentrated disintegrate fiber.	Concentrated solutions of strong acids decompose.
Effect of Alkalis	Strong solutions cause swelling and reduce strength.	Strong alkalis saponify into regenerated cellulose.
Effect of Other Chemicals	Attacked by strong oxidizing agents; not damaged by hypochlorite or peroxide bleaching solutions.	Attacked by strong oxidizing agents; not damaged by hypochlorite or peroxide bleaching solutions; soluble in phenol.
Effect of Organic Solvents	Generally insoluble; soluble in cuprammonium and some other compounds.	Soluble in acetone, concentrated and glacial acetic acid, some other solvents.
Dyes Used	Same classes as cotton for regular viscose; medium- and high-tenacity are more difficult to dye.	Regular acetate dyed by vat, azoic, and special acetate-rayon dyes; has affinity also for some acid and mordant; all basic dyes; pigment and solvent dyes. Saponified generally dyed with cotton colors. Dye affinity increased by cold alkali treatment similar to mercerization.
Resistance to Moths	Wholly.	Wholly.
Resistance to Mildew	Attacked.	Highly (discoloration only).
Dielectric Strength	Fair when dry.	3,000 volts per mil.
Typical Uses	Yarn used for crepe, voile, and low twists for many woven and knitted fabrics; hosiery; tire cord. Staple used alone and in blends for dress goods and sports wear; in blends for rugs, blankets, upholstery, house furnishings. Many industrial uses.	Dress goods, linings, hosiery, underwear, fused fabrics. Staple (often blended) for men's and women's wear, blankets, upholstery, carpets, and for fusing. Saponified used for light-weight fabrics for coating, laces, threads, general reinforcing, industrial belting and hose.
Method of Manufacture	Wood pulp or cotton linters are treated with caustic soda and carbon disulphide. The aged cellulose xanthate is dissolved in caustic soda and forced through spinnerets. Desulphurizing, washing, and bleaching of the yarn follow. Stretching the filaments while in a plastic state produces high-tenacity yarn.	Cotton linters or wood pulp are acetylated with acetate anhydride to form cellulose acetate which, dissolved in acetone, is extruded into warm air to form filaments. High-elongation acetate is produced by a modification of the process; saponified acetate, by a special stretching and saponification process.
Identification *(In addition to cross-section and stress-strain testing)*	Does not melt; burns readily with but little ash; insoluble in acetone; does not dissolve (but swells) in ammoniacal copper solution.	Melts before burning, forms hard black ball on tip; soluble in acetone; insoluble in methyl chloride. Saponified cross section similar to acetate, but tests like regenerated cellulose.
X-Ray Diffraction Pattern *Courtesy Chemical Research Dept American Viscose Corp.*		
Typical Stress-Strain Curves		

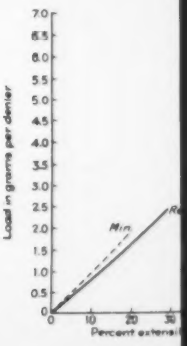
	Similar to viscose; hot dilute or cold concentrated disintegrate fiber.	Boiling in 5% hydrochloric acid ultimately causes disintegration; dissolves with at least partial decomposition by cold concentrated solutions of hydrochloric, sulphuric, and nitric acids.	Fair resistance to concentrated good resistance to others.
	Dilute have little effect; strong solutions cause swelling, loss of strength, and ultimate disintegration.	Substantially inert.	Unaffected by most; limited resi nium hydroxide.
	Not attacked by oxidizing agents; not damaged by hypochlorite or peroxide bleaching solutions.	Generally good resistance.	Generally good resistance.
	Insoluble; soluble in cuprammonium solutions and some other compounds.	Generally insoluble; soluble in phenolic compounds and in concentrated formic acid.	Insoluble in most; but swelled oxygen-bearing solvents such a and dioxan at elevated temp
	Similar to viscose rayon and cotton.	All acid, acetate, pigment, chrome; some direct, vat, azoic, basic; few sulphur; mordant with special application.	Colored before extrusion.
	Wholly.	Wholly.	Wholly.
	Attacked.	Wholly. (Material on nylon may be attacked.)	Wholly.
	Fair when dry.	Dielectric constant 4 at 1,000 cycles at 18% r.h. and 70° F.	500 volts per mil.
	Knitted and woven material for wearing apparel such as dress fabrics, gloves, and hosiery; upholstery and decorative fabrics.	Hosiery, satins, taffetas, marquisettes, ribbons, tapes, webbing, tricot underwear and gloves, laces, nets, threads, ropes, fish lines, tire cords, filter cloths, sail cloth.	Screening, upholstery, curtains, and handbag fabrics.
	Purified cotton linters dissolved in ammoniacal copper-hydroxide solution are extruded through a spinneret, drawn out in a water bath, and acidified.	Nylon can be made in a number of different ways such as the reaction between a diamine (for example, hexamethylene diamine) and a dicarboxylic acid like adipic acid. In the manufacture of yarn, the polyamide is melted, extruded through a spinneret, and stretched.	Petroleum and salt are treated t ene and chlorine. They are co vinylidene chloride which is with vinyl chloride. The resulti ed and extruded to form fila then oriented.
	Does not melt; burns with but little ash; insoluble in acetone; dissolves in ammoniacal copper solution.	Melts before burning; insoluble in acetone; soluble in xylenol; soluble in concentrated hydrochloric acid.	Does not support combustion, bu in acetone; dissolves in dioxa

High tenacity is similar to standard shown.

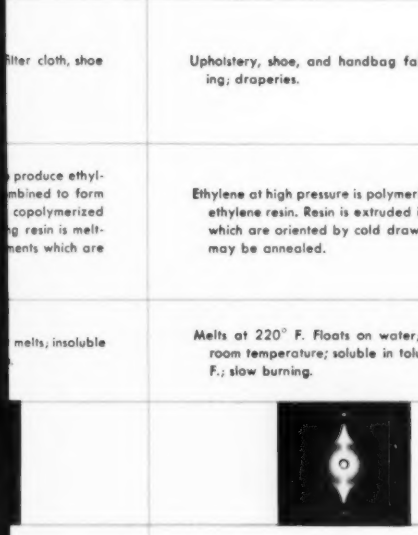


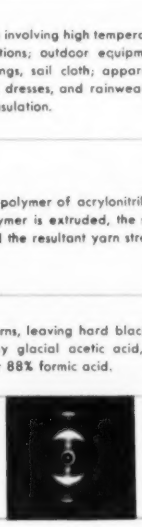


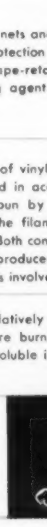


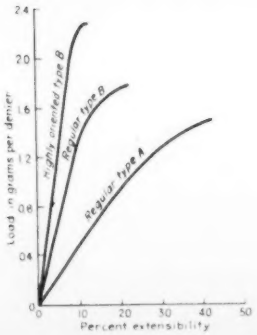


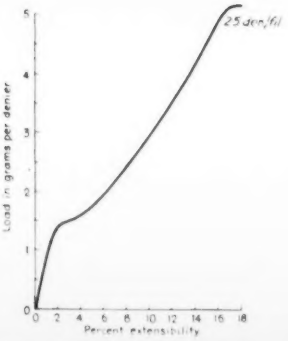
sulphuric acid;	Very resistant.	Good to excellent resistance to mineral acids.	None.
tance to ammo-	Very resistant.	Fair to good resistance to weak alkalis.	None.
	Generally good resistance.	Not harmed by oils, greases, neutral salts, and some acid salts.	Generally resistant.
or softened by cyclohexanone eratures.	Insoluble, but swollen at room temperature by chlorinated hyrocarbons, aromatics, and aliphatics. Becomes soluble in these at 160° F. Insoluble at elevated temperatures in aliphatic alcohols, glycerine, ether, carbon disulphide and acetone.	Not harmed by common solvents.	Soluble in ketones an carbons; swells an aromatic hydrocar oxide.
	Pigmented before extruding.	Some acetate and basic colors for pastel shades.	Dyed with dispersed swelling agents; dyeing.
	Wholly.	Wholly.	Wholly.
	Wholly.	Wholly.	Wholly.
	10,000 to 15,000 volts per mil. (Film)	Dielectric constant 6.5 at 60 cycles.	650 volts per mil. (60
filter cloth, shoe	Upholstery, shoe, and handbag fabrics; braiding; draperies.	Industrial uses involving high temperature and or acid conditions; outdoor equipment such as tents, awnings, sail cloth; apparel, including underwear, dresses, and rainwear; laminates; electrical insulation.	Filter fabrics, nets an rics for protection fusible shape-reta as bonding agent fibers.
produce ethyl- mbined to form copolymerized g resin is melt- ments which are	Ethylene at high pressure is polymerized to polyethylene resin. Resin is extruded into filaments which are oriented by cold drawing and then may be annealed.	Formed from polymer of acrylonitrile. A solution of the polymer is extruded, the solvent is removed, and the resultant yarn stretched.	A copolymer of vinyl is dispersed in ac then dry spun by standing, the filan stretched. Both con fiber are produce stretching is involv
melts; insoluble	Melts at 220° F. Floats on water; insoluble at room temperature; soluble in toluene at 160° F.; slow burning.	Melts and burns, leaving hard black bead. Not affected by glacial acetic acid, chloroform, acetone, or 88% formic acid.	Softens at relatively melts before burn bustion, insoluble i phenol.

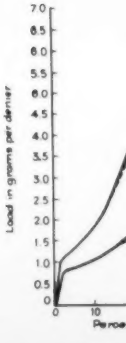


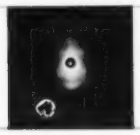
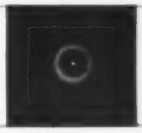
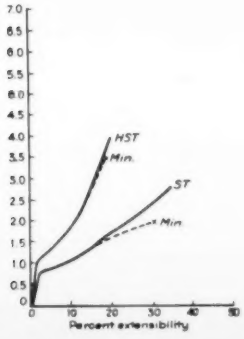
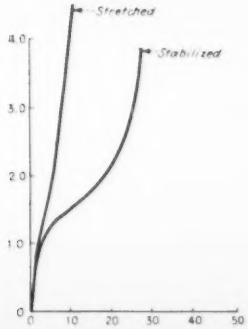
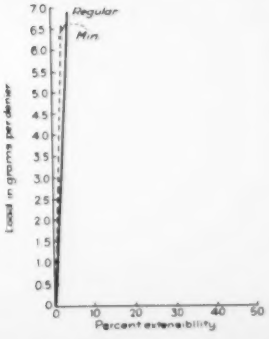


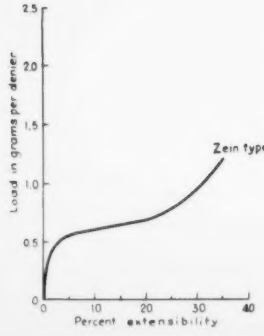
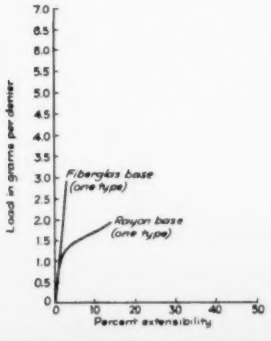








.	Little or no effect.	Attacked by hydrochloric and hot phosphoric only.
.	No effect.	Attacked by hot solutions of weak alkalis and cold solutions of strong alkalis.
rally resistant.	All weakened by ferric chloride in high concentration.	Generally good.
le in ketones and some chlorinated hydrocarbons; swells and softens in ethers, esters, omatic hydrocarbons, dioxan, propylene ide.	Both types weakened by 5% phenol; stretched softened by acetone and certain other ketones. Stabilized merely softened by these solvents.	Insoluble.
with dispersed dyes with aid of certain elling agents; solvent methods; pigment eing.	Acetate; some vat, acid, direct, and other classes for all types. (Stretched dyed at lower temperatures.)	Resin-bonded pigments. Special technique utilizing protein film applied during manufacture for vat, direct, acid, and chrome.
lly.	Wholly.	Wholly.
lly.	Wholly.	Not attacked (binder may be, however).
volts per mil. (60 cycle).		Excellent.
fabrics, nets and seines, clothing and fabs for protection against acids and alkalis, ible shape-retaining fabrics. Staple used bonding agent in combination with other ers.	Continuous filament: filter fabrics, dust fume bags, work clothing, dress goods, resist yarns, sail cloth, draperies, thread, pile fabrics, moulded fabrics, auto-window channels, and military fabrics. Staple: socks, sweaters, rugs, blankets, and suiting blends.	Electrical insulation, plastic reinforcing, fireproof decorative materials, filter cloths, paper reinforcing, coated fabrics.
polymer of vinyl chloride and vinyl acetate dispersed in acetone, filtered, deaerated; en dry spun by means of extrusion. After anding, the filaments are wet twisted and retched. Both continuous-filament and staple per are produced, but in case of staple no retching is involved.	A copolymer of vinyl chloride and acrylonitrile is dissolved in acetone, filtered, and then dry spun by means of extrusion. Yarn is stretched and twisted, following which the stabilized type is dimensionally set.	Special-composition glass marbles are melted in an electric furnace which has many minute holes in the base, to form continuous fibers. The fibers are attenuated to the desired size. Staple fibers are attenuated and formed by steam or air jet.
ens at relatively low temperature (170° F.); elts before burning; does not support combustion; insoluble in acetone; insoluble in 90% henol.	None will support combustion; but shrink, harden, and become brittle.	Does not burn.
		
		

Resistant (mineral acids up to 10%).	Weak, from no effect to slight; strong, from no effect to decomposition (depending on coating).	**Effect of Acids**
Insoluble in caustics up to 10% solutions.	Weak, from no effect to slight; strong, from no effect to decomposition (depending on coating).	**Effect of Alkalis**
Can be bleached with peroxide, sodium chlorite, bisulphite.	Can be made resistant to most chemicals, as specified.	**Effect of Other Chemicals**
Insoluble in all tested.	Coating dissolved by acetone, ethyl acetate, and other lacquer solvents (depending on coating).	**Effect of Organic Solvents**
Can be dyed with all usual types, including alkaline vat; shrinkage in acid dyeing less than 5%.	Color generally applied at time of coating, such as with durable pigments.	**Dyes Used**
Highly resistant.	Good.	**Resistance to Moths**
Resistant.	Good.	**Resistance to Mildew**
Lower than rayons.	Generally good.	**Dielectric Strength**
Woven outerwear, knit goods, upholstery, pile fabrics, hose, shirtings. Principally used in blends.	Used in fabrics for handbags, shoes, upholsteries, draperies, fashion accessories, furnishing materials for public places.	**Typical Uses**
Protamine fraction of corn protein (zein) is denatured and dissolved in caustic. Solution is extruded into precipitating bath. Resulting tow is aftertreated before being cut into staple.	Synthetic, cotton, linen, and other yarns are coated with various types of resins of which 21 different formulas are currently employed. Depth of coating can be varied to produce effect desired.	**Method of Manufacture**
Burns with bead; insoluble in acetone and hydrochloric acid.	Visual examination (core of fibers coated with plastic material).	**Identification** *(In addition to cross-section and stress-strain testing)*
 Photo is for peanut azlon.		**X-Ray Diffraction Pattern** *Courtesy Chemical Research Dept., American Viscose Corp.*
		**Typical Stress-Strain Curves**

Increased ELECTRIFICATION
A Key to Modernization

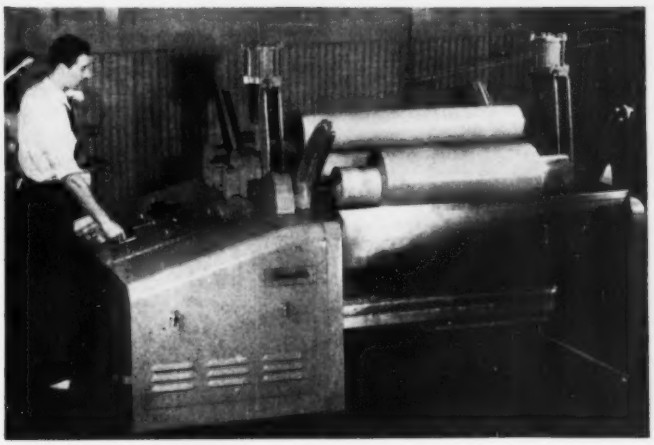
HIGHLIGHTS: *General Electric Co. publicizes postwar textile modernization with film and book — Material points out trend to comprehensive conditioning, electrified materials handling, and use of motors at point of power utilization—Increased speeds, continuous processing, improved product, and higher employee morale are other Post-war trends noted.*

A DOUBLE-BARRELED DRIVE to increase textile-mill productive efficiency and to step up the use of electric equipment is being put on by General Electric Co. It is part of the G-E "More Power to America" program.

Highlighting the textile phase are a sound-color motion picture, "Textiles Unlimited," and a manual, "How Textile Mills Are Modernizing." The film shows for the first time on the screen much new equipment and many new processes now in use in mills up and down the Atlantic seaboard. It covers air conditioning, fluorescent lighting, individual drives, adjustable speeds, moisture control, electronic speed controls, vacuum stripping, pin drafting, weft straightening, stroboscopic inspection, constant cloth-winding and dye-jig tension, spectrophotometry, electronic tensile testing, and air-pressure testing of sliver and roving thicknesses.

The manual serves to supplement the film and to document the facts given. The manual can be obtained and the film can be booked through Apparatus Div., General Electric Co., Schenectady 5, N. Y. Price of the manual is $1.25.

The textile industry uses just under four kilowatt hours of electricity per man-hour, while the national average is approximately five. The program to improve the position of the industry through publicizing the advantages of improved machinery and increased horsepower use was developed over a period of 18 months by close collaboration among mills, machinery builders, and the electric-equipment manufacturer.

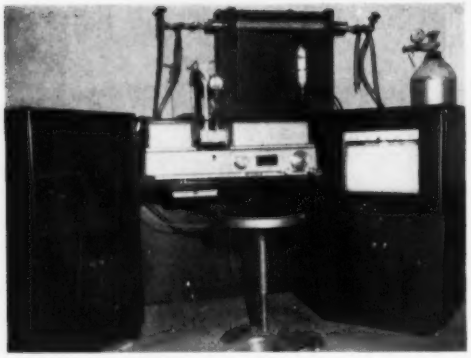


TENSION on cloth running through dye jig is controlled electrically by this latest type of equipment.

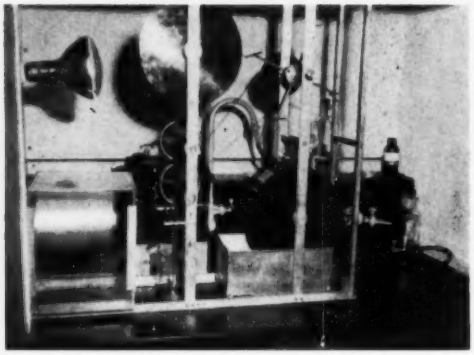
Major Modernization Trends In Textile Mills

(From "How Textile Mills Are Modernizing")

1. Comprehensive conditioning:
   - Air temperature and humidity
   - Lighting
   - Acoustics
   - Color
   - Plant layout
2. Materials handling:
   - Electromechanical devices for
     - Receiving
     - Processing
     - Handling between processes
     - Warehousing
     - Shipping
3. Power at point of use:
   - Individual drives for
     - Wider speed ranges
     - Better tension control
     - Increased efficiency, thus production
4. Higher and controlled variable speeds:
   - Increased production on
     - Spinning-frames
     - Full-fashioned hosiery machines
     - Warpers
     - Slashers
     - Looms
     - Ranges
5. Quality control:
   - Automatic process controls
   - New processing methods
   - New test instruments
   - New techniques of inspection
6. New processing methods:
   - Infrared heating of packages
   - Dielectric heating for twist control
   - Bonded yarns and fabrics
   - Pile fabrics
   - Continuous ranges in tandem



STRUCTURE OF FIBER-FORMING MATERIALS can be studied by use of TRI's new infrared spectograph.



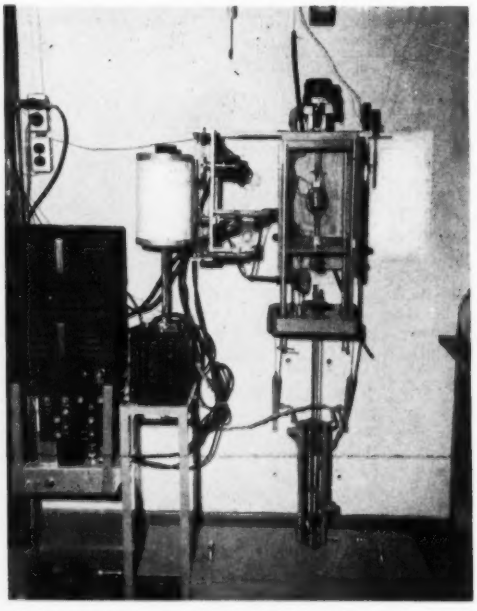
CHEMICAL TREATMENT of yarns under controlled conditions is carried out by this TRI-made apparatus.

TRI '49 — A Progress Report

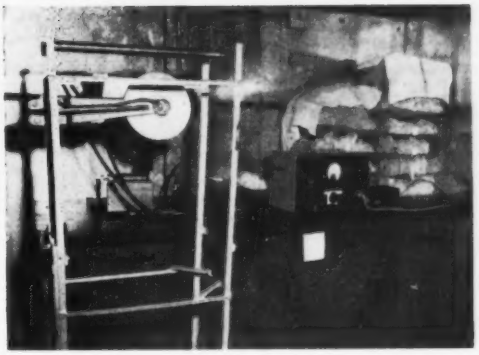
HIGHLIGHTS: *Practical results seen forthcoming from fundamental-research activities at Textile Research Institute—Degradation of 30% in cotton found in processing from baled fiber to yarn—TRI man to do "tagged-atom" work on dyeing at AEC laboratory—Staff and laboratory growth steady and sound.*

By **WILLIAM A. NEWELL,** *Managing Editor, TEXTILE WORLD*

RAPID STUDIES of changes in structure of fibers under tension are carried out with this X-ray diffraction unit equipped with a Geiger counter.



SINGLE-FIBER TESTER developed by TRI is used in stress-strain and relaxation tests. TRI hopes principles used in machine may be basis for new line of testers.



THE FIELDEN DRIMETER is currently under test in TRI studies to evaluate various moisture-measuring equipment.

SWELLING OF FIBERS under tension is being measured as a part of the dyeing research program. Spectrophotometer is in foreground.

CONTINUATION OF FUNDAMENTAL RESEARCH directed toward practical results and slow but sound growth and development tell the story of Textile Research Institute as of 1949.

That fundamental research can be practical is stressed by Dr. John H. Dillon, director of research of Textile Research Institute. Every TRI project is decided on by the institute research committee—a group of practical-minded mill men. Yet, TRI is now completely engaged in fundamental research but considers that all its research is directed at practical applications. The term "applied research" formerly used to describe part of its program has been dropped as superfluous. "Fundamental" indicates that each problem is attacked on a broad front so that the basic scientific principles involved may be clearly established. This "fundamental" approach tends to solve a whole class of problems rather than only a single problem of a class.

The main difference between the TRI fundamental research and the practical research work going on at such places as the Textile Research Dept., American Viscose Corp.; School of Textiles, North Carolina State College; etc., is in the approach. Practical research deals with the already known—it takes fibers, materials, and machines as they are and develops better ways to work with them. Fundamental research goes beyond the final barrier of applied work —the existing properties—to find out why the properties exist and what might be done to change them for the better. In other words, fundamental research attempts to find out what makes fibers "do like they do."

An important paradox of fundamental research is that failure to achieve a given end is sometimes as important as success. In delving into the reaches beyond the present limits of knowledge, it is news to find out what can't be done as well as what can be done. Furthermore, when an objective is not reached, fundamental research often indicates other better avenues of approach to the original problem or to other related problems.

TRI never carries out private research. Projects undertaken are for the immediate benefit of mill members and eventually for the advancement of the industry as a whole through free publication of the research results. These projects are of a nature usually well beyond the scope of any mill or other applied-research laboratory. It becomes the task of the mill laboratory in pursuing its own ends to make use of the knowledge gained through the fundamental research.

PRACTICAL PROJECTS. To bring out the practicality of fundamental research, Dr. Dillon has described a few of TRI's current projects.

One, a study of fiber damage, seeks to find out what damage comes to cotton in any form—fiber, yarn, or fabric— in both mechanical and chemical processing. In the course of the study, a 30% degradation in cotton-fiber properties was found to occur between the stage of raw fiber and spun yarn. This conclusion was reached through a fundamental investigation to find the degree of polymerization of the cellulose in cotton. The degree of cellulose polymerization is related directly to its molecular weight, says TRI. Sounds long-haired, all right, but the research turned up the practical cotton-degradation data mentioned. That particular information is so practical that a major cotton-processing machinery maker is financing pursuit of the discovery. Next objective: to localize the damage to find out which machines do the dirty work and to what degree. Final objective is to modify machines or processes to reduce damage and thus yield a better cotton with a longer life.

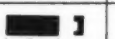
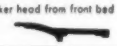
A second basic study which is aimed at practical results is a study of what TRI calls "cross-linking." In a millman's terms, one type of "cross-linking" is what happens when you put a wrinkle-resistant resin finish on cotton. This study may turn up some data on why application of the wrinkle-resistant-resin finish damages the cotton fiber, and a method of preventing this damage.

A third project that will have practical end results, if successful, is a study of wool fiber. The object is to find a differential in physical and chemical properties of fine and medium wools. If such a differential can be found, then a possible way of modifying medium wools to have some of the properties of fine wool may be at hand.

This wool project, Dr. Dillon points out, shows one dividend of fundamental research—cumulative knowledge. During and since the war, TRI has worked on fiber behavior under the sponsorship of the Quartermaster Corps and the Office of Naval Research. While no startling practical results have come forth, the insight gained into fiber behavior and investigation techniques made possible the current wool study. Without the previous work, it would probably have been impossible to attempt the wool study in the three-year time limit. Also, the final answers to fabric-development problems inevitably lie in knowledge of individual fibers, individual yarns, fibers in yarns, and of fibers and yarns in fabrics. Only through such research will the day come when fabrics can be designed quickly to specifications by referring

(*Continued on page 139*)

Gages Used for Setting Reading Full-Fashioned Knitting Machines

Description	Long-needle machine 1 13/16 camshaft	Long-needle machine 1 15/16 camshaft	Short-needle machine	Short-needle machine wide S'head	Short-needle machine KOB F-798-1	Short-needle machine 1940 type	Special for machine with welt turner	Special for machine with hook-up attachment	1945 mach. with welt turner and duo narrower
To set cams	1070 1070-A 1070-2 1070-3	1070 1070-A 1070-2 1070-3	1070-A 1070-2 1070-3	1070-2 1070-3	1070-2 1070-3	1070-2 1070-3			1070-2 1070-3
To set camshaft shifting cam and to check needle-bar cam (narrowing side)	5904-1	5904-1	5904-1	5904-1	5904-1	5904-1			5904-1
To set space between sinkers and knockover bits Legger	1182 (.070)	1182 (.070)	5247 (.060)	5247 (.060)	1182 (.070)	1182 (.070)	16388 (.085)	16388 (.085)	16388 (.085)
Footer	1183 (.078)	1183 (.078)	1182 (.070)	1182 (.070)	1182 (.070)	1182 (.070)			
To set knockover-bit cam roller to cam Legger	3520 (.093)	3520 (.093)	5344 (.170)	5344 (.170)	3520 (.093)	3520 (.093)			
Footer	3520 (.093)	3520 (.093)	3520 (.093)	3520 (.093)	3520 (.093)	3520 (.093)			
To adjust sinker-head verge plate	1145 (2)	2357 (2)	2357	9747 (2)	13212 (2)	13212			13212
To set distance between sinkers and front bed (catchbar)	1188	2511	2511	2511	1188	1188	15652		15652
For machines with "Einschluss" cams	1188-10	1188	1188	1188					
To set catchbar over sinkers in high position of front catchbar cam	15379	15379	15379	15379	15379	15379			15379
To set needle bar from sinkers after couliering (needle height) 	1189	1189	5322	5322	5322	5322			5322
To set sinker head from front bed 	1067 (2)	2327 (2)	2327	2327	2327	2327	15650 (2)		15650 (2)
To set jack bed from slurcam-box rod	1069	1069	1069	9279	13267 13267-1	13267 13267-1			13267 13267-1
For machines with "Einschluss" cams				13267 13267-1					
For machines with jack beds reconditioned at Textile Machine Works	1069-R 2379-R	1069-R	1069-R	13267 13267-1R	13267 13267-1R	13267 13267-1R			13267 13267-1R
To set jack-spring bar			12503	12503	12503	12503			12503

MACHINE GAGES
Are a "Must" for Fixers

HIGHLIGHTS: *Late-model full-fashioned hosiery machines have precision setting points—Fixers should not trust memory—Gage table should be available to all fixers.*

By H. B. LeFEAUX
Consulting Editor, TEXTILE WORLD

BEFORE THE NEW high-speed full-fashioned hosiery machines were built, it was a fairly simple job for fixers to keep in mind just what gages to use in making adjustments. Today, with the new welt-turner machines, the average fixer has to be alert to remember what gages are to be used. The welt-turner machines are much more complicated than the older machines, and a larger number of gages are used in their maintenance. Naturally, it is quite easy for a fixer to forget exactly what gages to use in making some adjustments.

It is well to remember that the machine builders have iron-clad rules for erectors to use standard gages in making all adjustments. It is just as important for the fixer to use standard

Gages Used for Setting Reading Full-Fashioned Knitting Machines

Description	Long-needle machine 1 13/16 camshaft	Long-needle machine 1 15/16 camshaft	Short-needle machine	Short-needle machine wide S'head	Short-needle machine KOB F-798-1	Short-needle machine 1940 type	Special for machine with welt turner	Special for machine with hook-up attachment	1945 mach. with welt turner and duo narrower
To set lever operating jack-spring bar			2.344			13777			13777
To set presser roller with round part of cam	2852 (6)	2852 (.246)	5248 (13)	5248 (.3125)	5248	14470 (13)	1 1/8		14470 (.3435)
To set distance between upper part of needles and front bed	1197	1197	1197	1197	1197	1197	1.499 15654-1		15654-1
To set distance between lower part of needles and front bed	1186-1	1186-1	1186-2	1186-2	1186-2	1186-2	15651		15651
To set front narrowing shaft	5303-4 15941-2	5303-4 15941-2	5303-4 15941-2	5303-4 15941-2	5303-4 15941-2	15941 15941-2			15941-2
To set narrowing rods from back narrowing shaft	1071	1071	1071	1071	1071	1071			1071
To set narrowing rods to correct height	1128 X=3 3/16	1128	5321 X=3.077	5321	5321	5321	X		10426 X=2.7185
To set narrowing machine in laid-out position Legger	14536	14536	14536	14536	14536	14536	4.25 4.156		14536
Footer	14537	14537	14537	14537	14537	14537			
To set vertical position of picot bar (duo-narrowing)			7/16 .350 3						15294
To check narrowing points on duo-narrowing machine when in low position on round cam		1.125							18566
To locate sinker head on center bed	.497					16806			16806
To set welt bars and square bridges							16329-1 -2 -3		16329-2 3
To square bridges								16329-1 -2 -3	
To set needle-bar hinges with guide (floating-needle bar)						F973-1 (120)			F973-1 (120)
Universal control to set needle bars, narrowing fingers, etc.	1126	1126	1126	1126	1126	1126			1126

gages made by the machine builder in his maintenance of the machines.

Too often, fixers are trying to push production, and minor adjustments are made on machines without the use of gages. This procedure only causes future trouble on the machine.

Welt-turner machines should be gaged with precaution because the flexibility of these machines has been decreased. On the older machines, a fixer could adjust a needle bar by screwing it in to make it knit looser, provided there was no more adjustment on the slur cam. On the welt-turner machine, simply screwing the needle bar in will definitely make the head knit looser; but in making such an adjustment, the fixer probably will move the bar. The result usually will be that in the welt-turning motion the needle will be in the wrong postion and in many cases result in drop stitches and hang-ups.

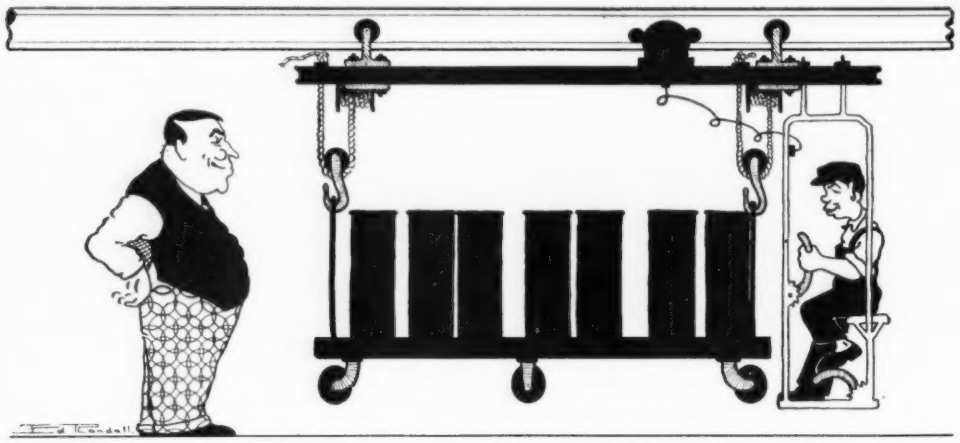
This example is just one of the points of flexibility on the new machine that is limited. There are many others.

FIXER LEARNERS. Since the war, there has been a great number of men training for fixers' jobs in conjunction with new equipment being installed. The importance of using a gage before any adjustment is made on the machine should be impressed upon all apprentice fixers. In many cases, unnecessary maintenance trouble can be avoided by developing the habit of using gages.

Certain of the gages that are easily bent should be kept in a place, when not in use, where they will be well protected. The exact point of distance of the gage is set at the factory when the gage is made. If gages are bent, their effectiveness is lost.

The accompanying table shows the gages most commonly used in the maintenance of the Reading machine. This table will be most helpful to a fixer if it is placed in the top of his tool box where it can be readily used.

Single reprints of the chart are available to subscribers. Write Editor, TEXTILE WORLD, 330 W. 42nd St., New York 18, N. Y. A nominal charge will be made for quantities.



CAREFUL ANALYSIS of problem should be made to arrive at best possible handling method. One mill successfully handles material on monorail-mounted carriage operated by one man. Analysis might have showed a better method, using conveyors, that would have eliminated the man, saved up to $6,500 yearly.

MATERIALS HANDLING— Handle With Care!

***HIGHLIGHTS:** Costly "boners" in installing handling equipment can be prevented by proper engineering—Careful study may reveal several solutions to problem—Use of consulting engineer is best preventive measure against mistakes.*

WHEN A TEXTILE MILL "pulls a boner" in installing materials-handling equipment, it's usually a "beaut." Fortunately, such boners have been few, but even these could have been prevented by proper engineering.

Needless to say, pulling a boner in putting in materials-handling equipment is usually a costly affair. The result can be use of more labor than previously used to do the job—labor that the equipment was supposed to have eliminated—and waste of expensive equipment and the labor required to install it. At the least, a poorly engineered installation means not taking maximum advantage of the cost-saving potentialities of the equipment used.

In these pages, TEXTILE WORLD depicts some of the "boners" actually pulled by textile mills in installing materials-handling equipment. We hope they will serve as warning posts to those contemplating similar installations. Of course, no names are mentioned, as we don't want to embarrass anyone. We hope that those mills which see in these pages their own mistakes will realize that they are shown only for the benefit of the industry as a whole.

Best advice we can offer for the prevention of such "boners" in planning your future materials-handling installations is to employ a competent outside consulting textile engineer. Here's why:

1. Materials-handling projects in textile mills must be handled by an engineer who knows materials-handling principles, methods, and equipment as well as he knows textile-manufacturing operations.

2. The outside consulting engineer is unbiased and not committed to any equipment manufacturer. He can often devise simple equipment to be

Materials-Handling Installation Checklist

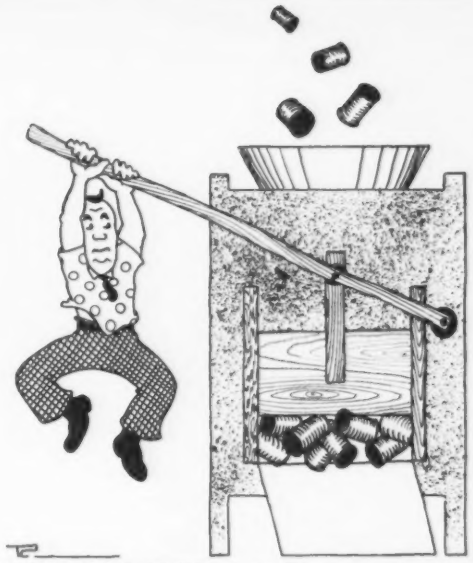
I. Are you sure the installation is needed?
   - A. Is installation less cumbersome and faster than manual methods?
   - B. Will a saving in labor result?
   - C. Will the installation fit in with future plans for expansion or modernization?
   - D. Would a rearrangement in layout do the job as well?
   - E. Are the contemplated savings due to improved methods rather than the new equipment?
   - F. Will the installation raise your fire-insurance premium?
   - G. Would a less expensive installation save a proportionately larger amount? (Would 90% of the cost be saved by 50% of the installation?)

II. If you're sure its needed, then will it do the job?
   - A. Is equipment suited to handling textile materials in the form planned without damage to material or handling equipment?
   - B. Can installation do more than merely transport, such as weigh, size, accept or reject, segregate, record, store, etc?
   - C. Can equipment be made to permit making of larger packages?

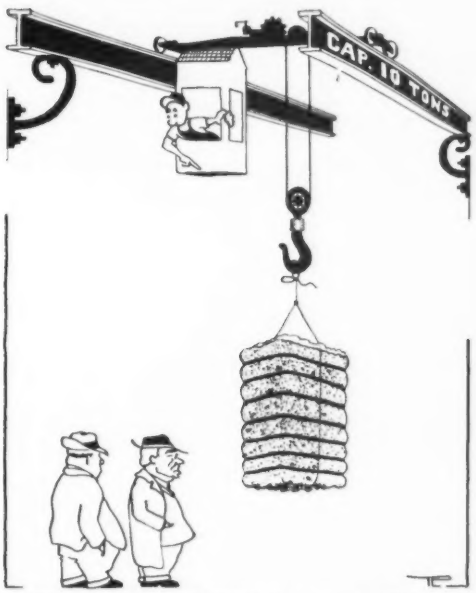
III. Has the labor force been prepared for the installation?

IV. Will the equipment be properly maintained?

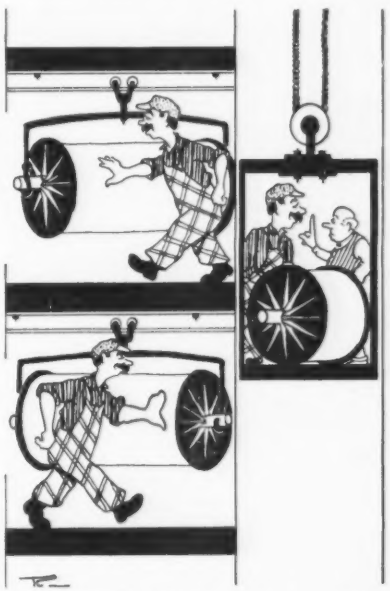
UNSUITABLE EQUIPMENT has been used by some mills for handling textile materials. One mill "eliminated" two men by a conveyor for handling bobbins; used three to keep yarn untangled.



EQUIPMENT NOT DESIGNED for handling textile packages has been used by some mills. One mill tried to use a drop gate on a chute for bobbins.



SLOWER AND MORE CUMBERSOME than manual methods is the equipment installed by some mills. One mill used a heavy-duty bridge crane in a warehouse. Fork lift trucks would have done the job better. Help may refuse to use equipment if it is too much trouble.



HANDLING EQUIPMENT should be more than a means of transport only. To realize full savings, automatic lifting, dispatch, and lowering should be included. One mill put in a beam-handling system, still used man to accompany beam from source to destination.

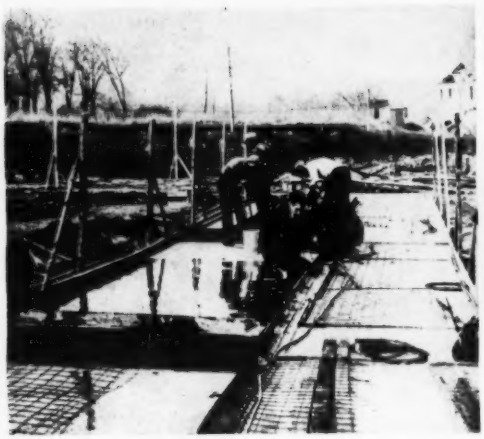
manufactured by the mill shop or a local machine shop according to specifications.

3. The consulting engineer can make an objective study of the project prior to getting quotations from equipment manufacturers, and he is not bound to any equipment manufacturer. This objective study may also reveal a better way to do the job without buying equipment, such as changing methods or layout.

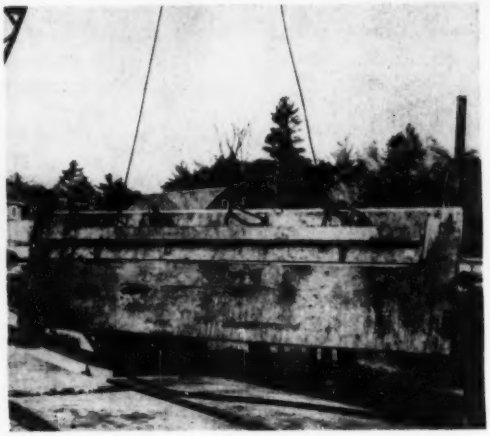
4. The outside consultant can assume for the mill the responsibility for insuring proper use and function of equipment installed by the supplier.

5. The consulting engineer can schedule the installation of equipment from several sources, so that no delays in installation occur.

6. His prevention of mistakes that might have been made can save the cost of his fee many times over in both labor and material.



PANELS WERE CAST in the flat at the site of the new Cocheco building.



A COMPLETED SPANDREL sandwich panel is lifted into place from the casting form.

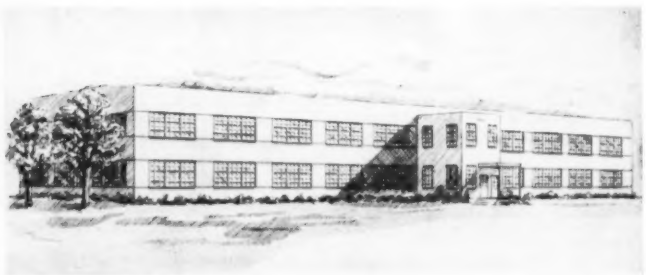
Cast Insulated Panels Used In WOOLEN MILL

HIGHLIGHTS: *Sandwich-wall panels of concrete and Foamglass cast at site of new mill—Three sizes of spandrels used—Installed cost of panels was about $1 per sq. ft., less than for brick wall—Insulation value several times that of the usual masonry construction.*

By E. H. HELLIWELL
New England Editor, TEXTILE WORLD

THE TEXTILE INDUSTRY has pioneered again in new and better ways of doing things. Cocheco Woolen Mfg. Co., East Rochester, N. H., has the distinction of being the first building in the county made of new and revolutionary design, construction, and materials.

This new type of building has an insulated-panel sandwich-wall construction. Resemblance of the panel to a huge sandwich can be readily seen in the cross-section picture. The panel used at Cocheco is slightly different from the picture, and is composed of a 2-in. core of a Foamgas with two 1½-in. outer veneers of concrete. The basic design consists of a big flat sandwich of any practical size and thickness. These are cast in-the-flat at the mill site and raised into position after hardening.



BUILDING DESIGN lends itself well to cast-panel wall construction. Mill has a most modern appearance as architect's sketch indicates.

Construction at Cocheco was really a race with Old Man Winter. The original plan called for all-brick construction. After careful consideration, is was decided that a spandrel installation of panel walls would insure the enclosure of the new building before the cold weather set in. Architect Harrison G. White drew the plans, and the Potter Horn Co., general contractor had all the panels installed far ahead of schedule. Panel was fabricated by Creaghan & Archibald, Inc.

Four sizes of spandrel sandwich panels with cellular-glass cores were used: 3x22 ft., 5½x22 ft., and 8x22 ft., and 6x7-ft. filler panels in the "window line." With this lighter, speedier type of construction, the mill owners saved money on foundation and erection costs. The finished panel wall has a heat-insulation value several times that of a brick wall.

The installed cost of the panel walls was over a dollar per sq. ft. less than the brick-wall construction initially

***CROSS SECTION** shows 2-in. core of Foamglas and two 1-in. concrete veneers.*

contemplated. This price may vary in other localities, but the saving should amount to about a dollar per square foot over any comparable masonry construction.

Lower wall weight in this type of construction accounts for four important savings: in foundation costs, in skeleton frame, in erection time, and in cost of handling. The panel wall weighs about one-third as much as a masonry wall.

Building the Cocheco plant proves that speedier installation is possible with this new panel construction. It is expected that still more time will be saved as contractors acquire greater experience, simplify techniques, and develop improved methods of handling and attaching this type of wall.

Fire resistance is of great importance in building construction, and the entire cellular-glass concrete panel is made of noncombustible materials. A panel was tested in a comparative fire-test furnace. Using the standard A.S.T.M. time-temperature curve, the rating of this panel was 3½ hr. The test exceeded the fire-test requirements of the New York City building code by more than 1½ hr.

The basic design of the Cocheco installation is now being used in other major construction jobs. There is said to be no increased heat loss at the joints and no cold spots, and moisture migration is controlled through the use of a newly "permanent mastic" material. This panel wall with cellular glass in combination with concrete veneers appears to meet the building needs of today because of its apparent superior properties, its adaptability to any type of design, and its economic advantages of low material and labor costs.

TRI '49 — A Progress Report

(Continued from page 133)

to a series of standard tables or by using standard formulas.

Another major program under way in the TRI laboratories is a dyeing project, independently supported for a five-year period by a group of dyers and finishers, rayon manufacturers, and dyestuffs manufacturers. Its objective is to achieve a better concept of the dyeing process.

The approach to this work is based on previous studies by TRI of fiber swelling. Techniques for using radioactive tracers for measuring dyestuff and salt-ion pickup are also being developed. Part of the latter aspect of the work will be carried out by a TRI man working at the Brookhaven (L. I., N. Y.) National Laboratory of the Atomic Energy Commission. Dr. Dillon credits the stimulus for this move to William B. Dall, of TEXTILE WORLD, author of "Tagged Atoms Offer a New and Amazing Research Tool" [TW, Dec. '48, p. 103].

Another current TRI project that may lead to better, more durable fabric-proofing treatments is a study of topo-chemical surface treatments. Topo-chemical treatments refer to those that react with fiber, yarn, or fabric surfaces only. More effective proofing treatments that will be more permanent may be the practical end result.

Still other research projects recently completed or still in progress are:

1. A study of infrared drying. This project came up with the now known conclusion that infrared is fine but costly; is best for booster heat. However, some valuable information on infrared optics that interested military men was a by-product of the study.

2. Fiber behavior—a continuation of the Office of Naval Research study on individual fiber properties—what makes fibers tick.

3. Absolute measurement of the molecular weight of cellulose—sounds complicated, and is; but it may help improve cellulosic-fiber dyeing and mechanical processing as well as help prevent fiber decay.

4. Moisture-meter calibration — a study of the Steinlite, Hart, Moisture-Register, and Fielden Drimeter devices for measuring moisture. This study, partially completed, gives mills the straight dope on what these moisture-measuring devices can do and how accurate they are. Also studied and improved for textile moisture measurements was the Karl Fischer laboratory method of moisture determination.

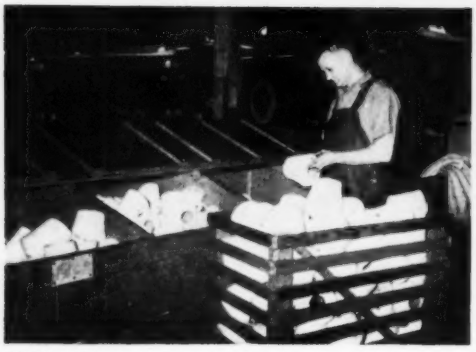
GROWTH. TRI growth, since TW's last report [TW, Oct. '47, p. 101] has been slow, but steady and sound. The staff has grown from about 25 two years ago to about 45 today. The staff at the Princeton, N. J., laboratory consists of a director; an assistant director; 11 full-time scientists; 14 research fellows; four part-time Princeton University professors; five technical assistants; a librarian; and eight administrative, maintenance, and stenographic employees.

In addition, TRI now has a "roving ambassador" to the industry, K. Lanse Turner, who is an assistant to the director and a field engineer. Mr. Turner, a man with cotton-mill and research-laboratory experience, contacts member firms of TRI, interprets the TRI laboratory studies as they apply to the mill problems, discusses possible research projects, and brings mill reactions and ideas back to Princeton.

Another move to keep TRI in closer touch with member mill is publication of *Notes on Research*. The Notes supplement the monthly *Textile Research Journal* by keeping mills posted on the progress of individual long-range research projects. Dealing with one subject only, the Notes are valuable adjuncts to the files of mill men concerned with the research covered. Cover page of the *Notes* sums up the contents of each issue in quick-reading form for the busy executive before he passes the Notes along. Practical, useful data uncovered in research are stressed.

The TRI research staff has fully exhausted the laboratory-making possibilities of the Princeton building. Every inch on all floors, including the basement, is now devoted to research activities. Clever and effective use has been made of individual-room air conditioners to provide conditioned rooms at a fraction of the cost of an air-conditioning installation (mills, please note).

In general, it appears that the original principles of the triangle of research–Textile Research Institute—Textile Foundation—Princeton University–have proved to be sound. The sequence–establishment of laboratories; selection of basic problems; gradual growth and improvement of staff; contact with industry; undisturbed pursuit of assignment; and, finally, basic research results of long-range value to the textile industry–has been carried out carefully and with good results.



FROM YARN . . . .

CONDITIONED YARN is delivered to the knitting department and stored in well-labeled bins. Only a one-day supply is kept in the bins.

. . . . . TO SOCKS

FINISHED ANKLETS are inspected and checked for size and length. In them is the story of Richmond's quality control.

Good HOSIERY INSPECTION Insures Product Quality

HIGHLIGHTS: *Double and triple inspection at every process guards against defects—Test finishing runs of knitting lots give knitting department an early check—Quality team in each department is composed of foreman, fixers, and operators.*

"HIGH STANDARDS are the first requirement for quality circular-hose products," A. L. McCall, superintendent, Richmond Hosiery Mills, Rossville, Ga., believes.

"We set our standards high, worked out a system to maintain them, and then worked out a system to maintain the system."

Richmond's quality-control system consists in constant inspection for defects. Much of the inspection serves a twofold purpose: (1) to catch defective workmanship, and (2) to check on the work of an inspector who previously examined the product.

The mill buys rayon, nylon, and mercerized cotton yarns; and also uses carded and combed yarns spun in its own plant. As shipped yarn is received, it is placed in a basement warehouse until it is needed in the knitting department. Yarn lots are marked and kept separate. Wrappings are not taken off the yarn packages until they reach the knitting department; then a one day supply of yarn is stored in well-marked wooden bins.

EMULSION. No conditioning emulsion is used for cotton. For rayon and nylon, a glass container mounted on the machine is supplied with a dispensing wick and an emulsion of 50% Varsol and 50% light needle oil.

Fabric quality of each hose is checked by the knitter when the hose has finished knitting. If any variation is noted, the machine is flagged for the fixer.

Checks for size, length, and quality are made three times a shift by one inspector, who takes fabric from each machine and inspects it at an inspection station in the knitting area.

As an added check on quality, goods are taken from the different machines

***HUMIDIFIER HEADS** with automatic individual controls have gone far toward maintaining uniform humidity.*

***KNITTING HEADS** are thoroughly cleaned once a shift. Twice a shift the heads are sprayed with oil.*

***KNITTERS** inspect each hose for knitting quality. If trouble develops, the machine is flagged for the fixer.*

and routed for complete processing. After each step of processing, checks are made for size, length, and clearness of fabric. Complete written reports are made on these test lots, and the reports are returned to the knitting-department supervisors for any necessary follow-ups.

Machines are blown off and the room is cleaned with air once each shift. Fluorescent-light fixtures are washed once a week.

No fixed schedule of overhauling is followed. A good system of inspection and lubrication and a close follow-up of defects in knitting keep fixers informed on the condition of the machines.

When trouble develops or machine parts have to be replaced, the foreman and head fixer make a thorough inspection of the machine. They determine the cause of wear, breakage, or faulty knitting; and the necessary correction is made.

OILING. Twice each shift fixers spray machine heads with oil. Other lubrication is in accordance with a planned lubrication program. Moving parts are inspected, cleaned, and adjusted at frequent periods in conjunction with the lubrication program.

Needles are stored in cabinets built off the floor and with spaces at the front and back of each shelf so that heated, oily air can circulate in the cabinets. Rust is kept down by the heat and oil.

Anklets, half hose, and rayon gray goods off the machines are placed in lot bags at the machines; they move from one to another of the finishing processes in the same bag. Nylon gray goods are inspected on boards at the machines and placed in one-dozen lots in knit bags.

Loopers are not paid for defective workmanship; therefore it is to their interest to maintain quality. Two hose from each dozen are closely inspected for looping in order to catch variations

(Continued on page 246)

Knitting Data

Product	Machines per operator		Cylinder sizes (in.)	Speed (rpm.)
	Knitter	Fixer		
Anklets	20	50	2 to 4	260
Half hose	4 to 6	35	$3\frac{1}{2}$ and $3\frac{3}{4}$	260
Women's rayon hose	30 to 33	60	$3\frac{1}{2}$	230
Women's nylon hose	20 to 33	30	$3\frac{1}{2}$ and $3\frac{3}{4}$	200

Needles, Yarn, etc.

Half hose and anklets	Gage			
	24	36	48	70
Cylinder size (in.)	$3\frac{1}{2}$–4	3–$3\frac{1}{2}$	$2\frac{3}{4}$–$3\frac{3}{4}$	2–3
Needles	116–132	130–150	148–220	160–240
Leg yarn	16/2 C.P.	40/2 Mer.	50/2 Mer.	70/2 Mer.
Heel and toe yarn	12/2 C.P.	30/2 Mer.	36/2 Mer.	60/2 Mer.

Women's rayon hose	Gage	
	54	70
Cylinder size (in.)	$3\frac{1}{2}$	$3\frac{1}{2}$
Needles	260	300
Welt yarn (den.)	150	125
Leg yarn (den.)	150	100
Decorative-heel yarn (den.)	75	50
Heel and toe yarn	50/2 Mer.	70/2 Mer.

Women's nylon hose	Needles			
	300	320	340	400
Cylinder size (in.)	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{3}{4}$
Welt yarn (den.)	60	60	60	30
Leg yarn (den.)	40	40	30	15
Decorative-heel yarn (den.)	30	30	20	20
Heel and toe yarn (den.)	70	70	60	30

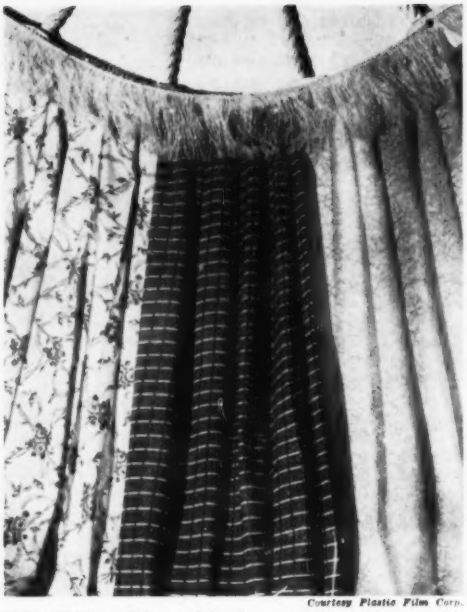
OFF-THE-MACHINE samples are inspected at tables in the knitting area and routed through finishing processes.

GRAY GOODS are inspected on forms in the gray-goods department. Rayon and nylon hose are shown here.

FINISHED HOSE are inspected and made ready for packing. "Customers judge us by what they find in the box."

Courtesy Kestral Corp.

SILK-SCREEN METHOD produces delicate effects and complicated designs.



Courtesy Plastic Film Corp.

VINYL FILMS are being used for shower curtains, drapery materials, and aprons.

PRINTING VINYL FILMS
Requires Textile Methods

***HIGHLIGHTS:** Roller-printing machinery best—Special inks are required—Screen method also used—Transfer printing gives more detail.*

SINGLE- OR MULTIPLE-roller printing produces over-all patterns on vinyl film.

PRINTING ON VINYL FILM increases the volume of work done by textile printers. In general, these vinyl films are the vinyl chloride co-polymers and the co-polymers of vinylidene chloride and vinyl chloride.

These films are of two types: the cast type, which ranges in thickness between 1 and 40 mils; and the calendered type, which varies from 4 to 45 mils. Both of these films are produced in widths ranging up to 60 in., although they may exceed this limit.

In determining the printing equipment to be used, the types of ink necessary to print the vinyl film and the pressure required to produce the desired effect must be taken into account. Since textile printing machines fit the requirements, and also since much of the vinyl film is produced for textile use, it is only natural that textile printers undertook the task of developing the proper printing medium.

There are three principle methods of printing on vinyl films. These are, in order of volume:

1. Roller printing.

2. Screen and air brush.
3. Transfer.

A textile roller-printing machine is made up of printing units surrounding the steel impression cylinder, which is covered with synthetic rubber. The printing units contain the engraved roller, which obtains its color from a color box by means of the furnisher roll. The excess color is wiped off by a doctor blade, and the recessed surfaces of the copper roll deposit the ink upon the film. The engraved roll is driven, but the impression cylinder is not; thus the tension remains theoretically constant once register is obtained. Adjustments must be made for changes in the thickness of the films.

THIN INK. Owing to the smoothness of the film, and the almost water-thin ink used, all defects on the engraved rollers are transferred to the vinyl film. The roller engraving may be either photographic (a chemical etch) or pantographic (a mechanical etch). The engraving should be shallow, and the screen or ground must be fine, 100 to 170 lines on pantographic, 85 to 185 on photographic. The rolls need to be highly polished and free from defects.

The passage of the film through the machine is accomplished by unwinding the film close to the impression cylinder. The film passes between the engraving and the cylinder, is printed, taken off the cylinder on a synthetic rubber blanket, and dried.

The ink to be used in this printing process must have the following properties:

1. It must be fast to light.
2. It must be alkali-resistant.
3. It must be quick-drying to the extent that in multi-color printing it will not carry over to the next color and smudge; but it must not dry in the engraving.
4. It must dry quickly enough so that it will not be tacky if blocking is to be done.
5. The color must not bleed or sublime.
6. In heat-sealing operations, there must be no transfer.
7. The bond between the film and the ink must be perfect, and the color must become part of the film when the ink is completely dry.

These qualities are attained by using alkali-proof, light-fast pigments. These pigments must be carefully chosen and may be either organic or inorganic, including metallic powders. The pigments are then dispersed in vinyl resin, which has been dissolved in a ketone type of solvent. Formulas are varied according to the type of resin used, and the solvents must be balanced to suit each particular condition. Thinners may be added to obtain proper viscosity, drying speed, and better adhesion.

FILMS VARY. The films themselves vary in formula; with some it is much easier to obtain a good bond with the ink.

The plasticizer may cause the forming of a bad bond, but more often the lubricant used in removing the film from the calendar is at fault. Waxes are commonly used, and the vinyl film retains some of this waxy surface. Often, the ink will not penetrate this wax; and as a result it must be removed or softened. Wetting it with butanol or preheating it by passing it over a heated roll so that the ink can penetrate the wax are two methods of improving the bonding properties of the film.

What actually happens in the printing operation is that the ink strikes the film, carrying along enough solvent with it to dissolve partially the film at the point of contact. Almost instant drying restores the surface of the film, leaving the deposits of the pigment as part of the film itself.

After the film is printed, it must be dried beyond the possibility of any blocking, and then rewound. Drying is accomplished by almost any combination of the following operations:

1. Passing over a heated roll or rolls.
2. Festooning.
3. Passing through a heat tunnel.
4. Air drying.

In applying heat, the temperature must be kept below 160° F. Higher temperatures soften the film and allow it to stretch, making it necessary to cool the film over a roll kept at a constant temperature by circulating tap water or ice water. Tackiness of films is increased by printing, and cannot be eliminated by drying.

PAPER BACK GRAY. The engraving is usually wider than the film and the cylindrical impression roll receives ink from the excess width. Surplus ink may be wiped off the large roll at the end of the day. Generally, a back gray is used to prevent printing on the rollers. Cotton is seldom used in this capacity, because printing the film tends to reproduce the weave of the cloth on the film. To obtain smooth surfaces, paper grays have come into use. This paper may cover the entire roll or only the exposed portions.

Two new methods of treating vinyl film in the print machines have been developed; they are "topping" and "processing."

The first, "topping," produces a two-toned effect. The film, either smooth or embossed, is printed with blotch rolls, usually photo-engraved to print an all-over solid mass or color. The film is then fed directly to the print machine and is then dried.

The second development, "processing," provides a uniform finish of any desired type by printing on the finish, with special engravings and inks, following the same procedure outlined in "topping."

The unit-type machine used for printing cellophane, foil, and similar papers are not so easy as textile machines to use for printing on vinyl film for the following reasons:

1. They are too narrow, generally not exceeding 28 in.
2. It is difficult to obtain correct register, and the unit machines can be used only for single-color printing.
3. It is a more expensive method than when using textile machines.

The narrowness of the rollers could be overcome, but the problem of obtaining correct register for multi-color prints is more difficult. In this printing machine, the units themselves pull along the film; and various attachments are needed to produce the correct register and constant tension.

The speeds of the two types of printing are illustrated below. The reasons for the slowness is that the materials are expensive and mistakes in printing cannot be corrected. The vinyl film comes in short rolls requiring frequent machine stops to change films.

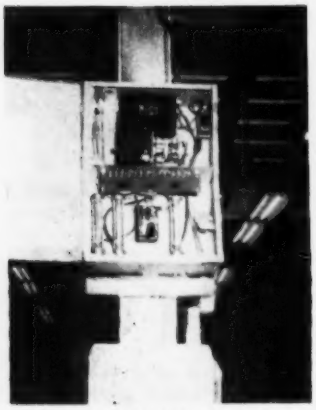
SCREEN PRINTING. The second satisfactory method of printing is the screen method. This method produces more artistic effects, but is much slower. Basically, it is the same procedure as screen printing of cloth.

In printing the vinyl films, a special kind of screen or stencil is required;

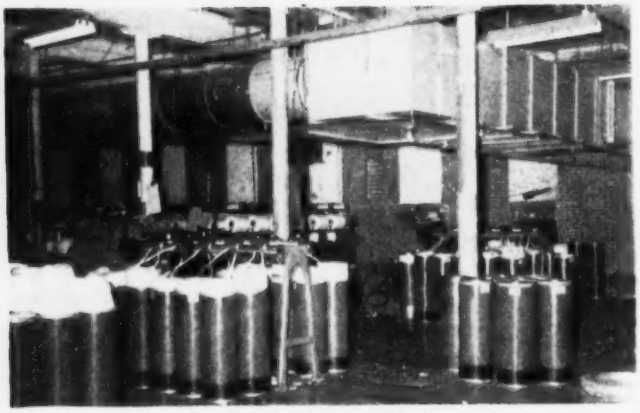
(*Continued on page 222*)

Production Printing Speeds

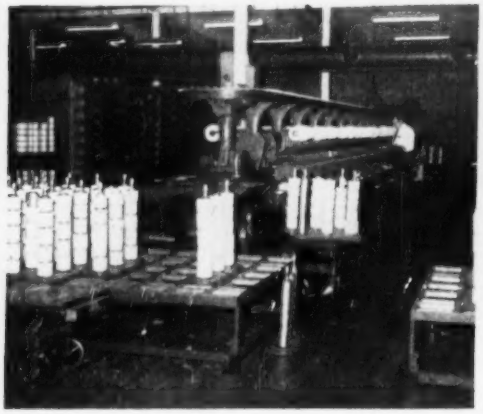
Type of Print	Speed of Textile Machine	Speed of Unit-Type Machine
Single color (max.)	75 yd./min.	150 yd./min.
Single color (avg.)	40 yd./min.	
2 and 3 color (avg.)	30 yd./min.	
4 color (avg.)	25 yd./min.	



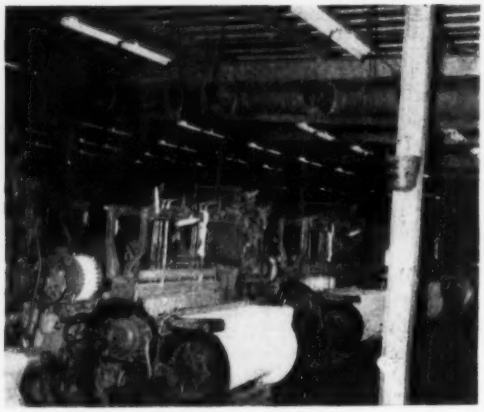
MASTER CONTROL BOX contains all the necessary controls for regular operation.



DRAWING-FRAME area has a large air duct overhead which provides temperature and humidity conditions best suited for the drawing process.



SPOOLER AND WARPER ROOM temperature of 85° F. and 50% r.h. are maintained by the Humiduct outlets shown.



WEAVE-ROOM spacing of the Humiduct outlets insures uniform temperature and humidity in this department.

AIR-CONDITIONING Unit Steps Up Mill Efficiency

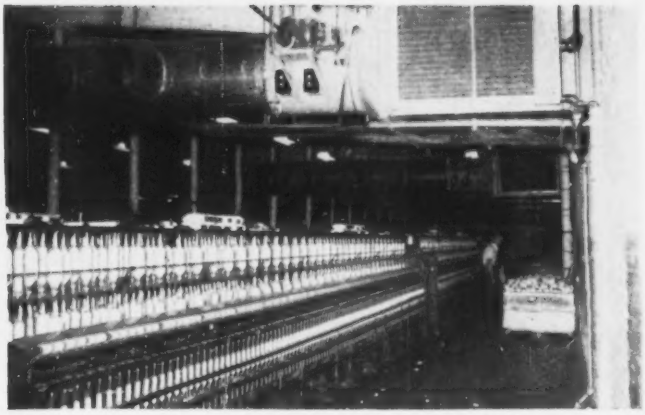
HIGHLIGHTS: *Temperature and humidity control improves quality at Bath Mills—Efficiency increased up to 5%—End breakage down—Greater comfort and more healthful conditions provided for employees.*

THE ADVANTAGES WHICH COME from a carefully planned and well-engineered industrial air-conditioning system are both productive and personal, according to results obtained by Bath Mills, Inc., Bath, S. C.

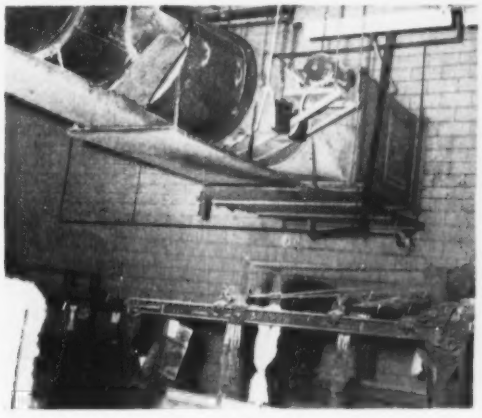
Designed primarily for increasing employee comfort, the system installed by this company provides evaporative cooling, ventilation, air filtering, air changing, and automatic control of temperature and humidity. The system has proved of great benefit to the employees. Atmospheric conditions within the mill are maintained to give the best operating results of production control and to insure the best working conditions.

This complete system was engineered by Bahnson Co., Winston-Salem, N. C. Included are Bahnson Humiducts and a complete air-conditioning unit. The system was custom-built to meet all requirements of the building construction, the heat load, the area of space to be conditioned, and temperature and humidity.

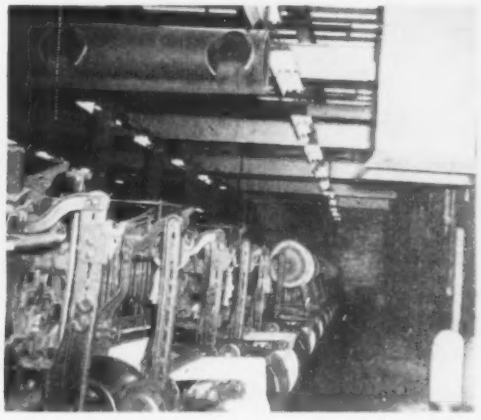
INTERMEDIATE FRAMES operate at proper roving-process temperature and humidity.



SPINNING ROOM enjoys 22 Humiduct outlets installed to handle 233,500 cu. ft. of conditioned air per min.



OUTSIDE-CONNECTION area of the Humiduct in the weave room is protected with moisture shields to prevent precipitation in the area.



SEPARATE AIR DUCT shown at right is not a part of the controlled system, but is used for additional air when needed.

The new one-story weave room and a three-story main building, with the preparatory processes, are included in the new system. Atmospheric conditions in each department are controlled to meet individual processing requirements. Distribution ducts are constructed of copper and made to proper length, diameter, and number of outlets to meet the specifications for air velocity and distribution.

AMPLE VENTILATION. Dampers control the percentage of fresh air and recirculated air in the intake pipes. They are so interconnected that the amounts of fresh air and recirculated air required are automatically regulated by the control system, providing uniform conditions in both summer and winter regardless of changes in outside weather.

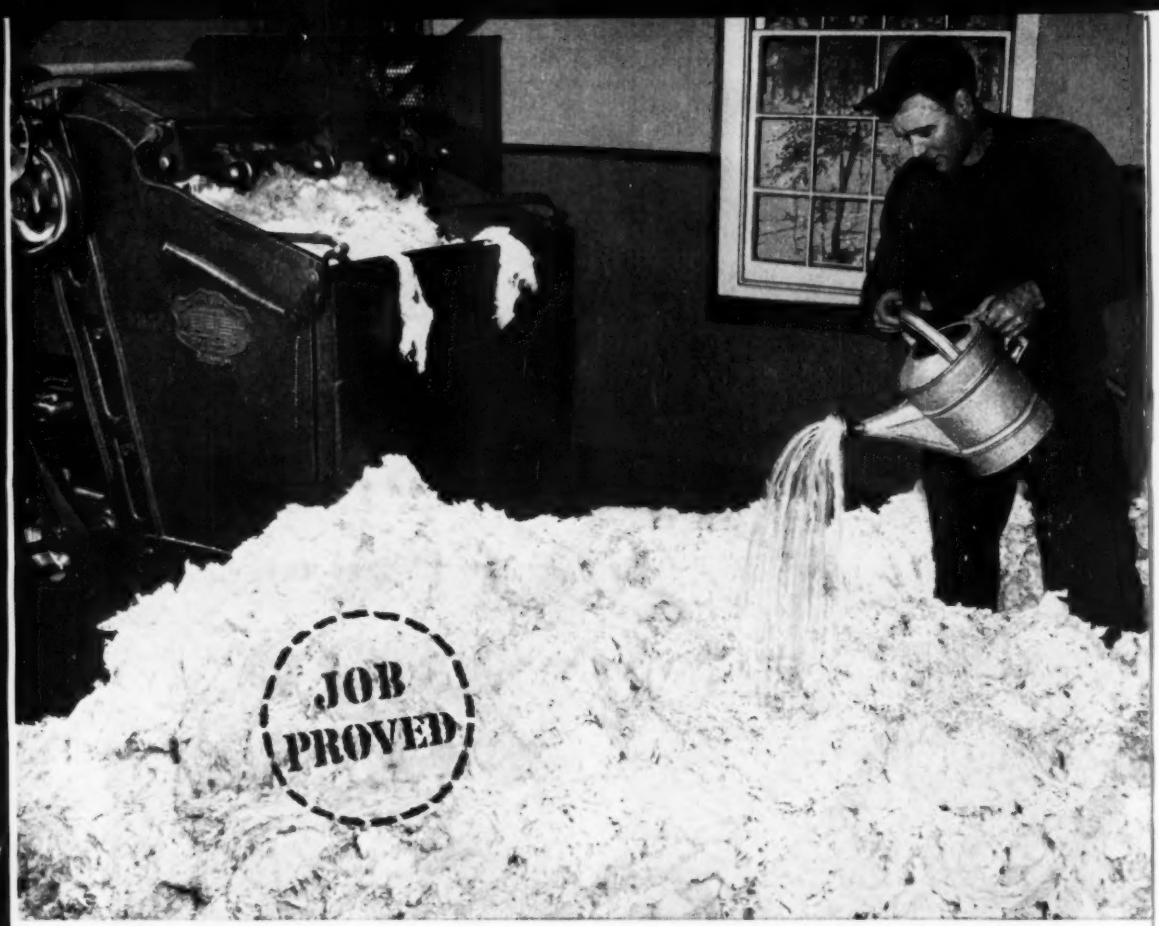
A high concentration of heat-per-square-foot area formerly existed in the spinning room. Twenty-two Humiducts are now installed to handle a total of 233,500 cu. ft. of air per min. These spinning room outlets evaporate of 595 gal. of water per hr. and are spaced about 40 ft. apart. They are designed to take care of 4,124,120 B.t.u.

BENEFITS. Direct benefits obtained from the installation are:

1. Production efficiency has been increased 3 to 5%.
2. Ends down in spinning have been reduced 3 to 4%.
3. Quality of product has been materially improved.
4. Employee morale and increased personal efficiency have been stimulated.

Interesting and effective auxiliary controls are contained in the master control box. They include high-limit safety, temperature, damper, and weekend controls. They are set for normal operation, changed for weekend shutdown, and then reset in sufficient time to bring temperature and humidity up to operating levels before machinery is started for normal production Monday mornings. The control box is locked, and changes are made only by the plant superintendent.

The new air-conditioning system is but a part of the Bath Mills modernization and expansion program. New machinery and equipment has been installed, and effective light supply and distribution has been obtained with new fluorescent lighting units and interior eye-ease painting—all in addition to the air-conditioning system.



SUNOTEX INCREASES YIELD 3%

Wool Fibres Lubricated Quickly and Thoroughly; Corrosion on Pickers and Cards Eliminated

A company processing wool for piano felts switched to Sunotex five years ago in an effort to improve production. Right from the start, yield increased 3 pounds per 100 pounds of wool processed. In addition, the mill is saving time in the preparation of emulsions, because Sunotex mixes readily with water.

The Sunotex emulsion is applied on a layer of wool three inches thick. This is repeated, layer after layer, until the desired amount of wool has been made ready for the picker. Sunotex penetrates these fibres quickly, thus speeding production. And in the carding room Sunotex performs another important function by keeping dry webs from breaking, enabling men and machines to produce steadily.

"Job Proved" Sunotex prevents corrosion on metallic surfaces of pickers and cards, scours out easily and cleanly. This is typical of the way Sun Textile Processing Oils enable manufacturers to cut costs, speed production, improve quality, and protect costly machines. For further information about Sunotex and other Sun products for fibre processing, call or write the nearest Sun Office. The services of a Sun Engineer are available to you without obligation.

SUN OIL COMPANY • ***Philadelphia 3, Pa.***
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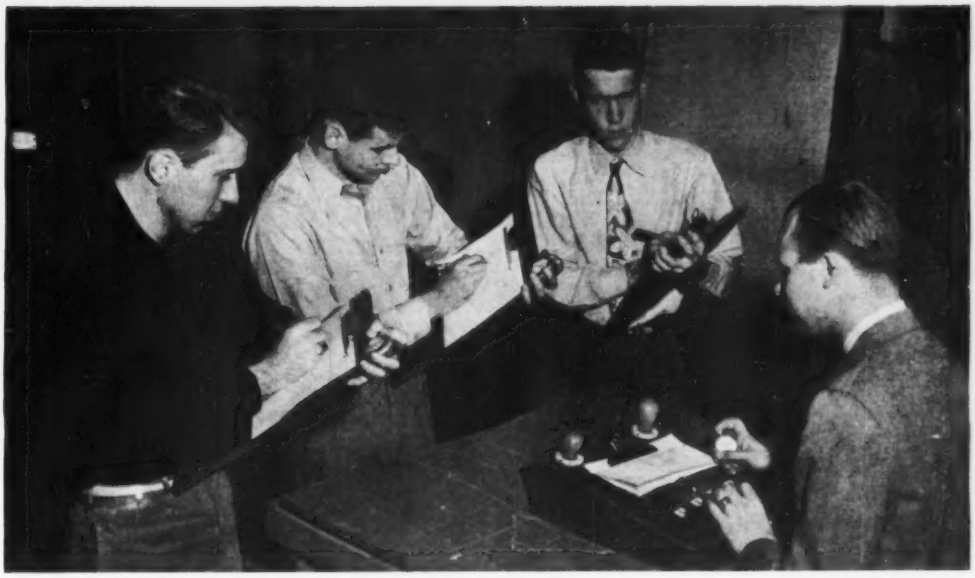
SUN PETROLEUM PRODUCTS
"JOB PROVED" IN EVERY INDUSTRY

SUNOCO



SUPERVISORY CONTROL of stopwatch accuracy is made possible by the electrically controlled "gadget" being timed by young timestudy men. (Photo courtesy Industrial Engineering Dept., Georgia Institute of Technology)

Give Your TIMESTUDY Trainee New Tools

HIGHLIGHTS: *Electrically operated "gadget" speeds training of timestudy trainees, results in accurate use of stopwatch—Other mechanical aids to training remove necessity for training on production machines.*

By H. R. MOORE
Standards Supervisor, U. S. Rubber Co.

and C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

TIMESTUDY TRAINING in a Southern mill makes use of a special "gadget," the origin of which is so obscure that its name remains "gadget" to the time study men who have used it. It speeds timestudy training, gives the trainee greater stopwatch accuracy, and suggests other mechanical means of training to avoid the use of mill production machinery.

The "gadget" is a box electrically wired to switches that control buzzers, bells, and any number of colored lights. One model has two lights, a buzzer, and a bell. The switches control the functions of the box so that the duration of a light, or of the ringing of a bell or buzzer may be varied at will by the operator of the box.

The timestudy supervisor of one mill uses it in the following manner:

(1) The lights, buzzer, and bell are visualized as "elements" of a job in the mill; and a predetermined time for each element is written down on a chart.

(2) The supervisor starts his watch and follows the predetermined time chart, switching from light to bell or to any other "element" desired, according to the time schedule adopted.

(3) The timestudy trainees time the lights, bell, and buzzer separately, snapping their watches back to "zero" when following the snap-back method of timing.

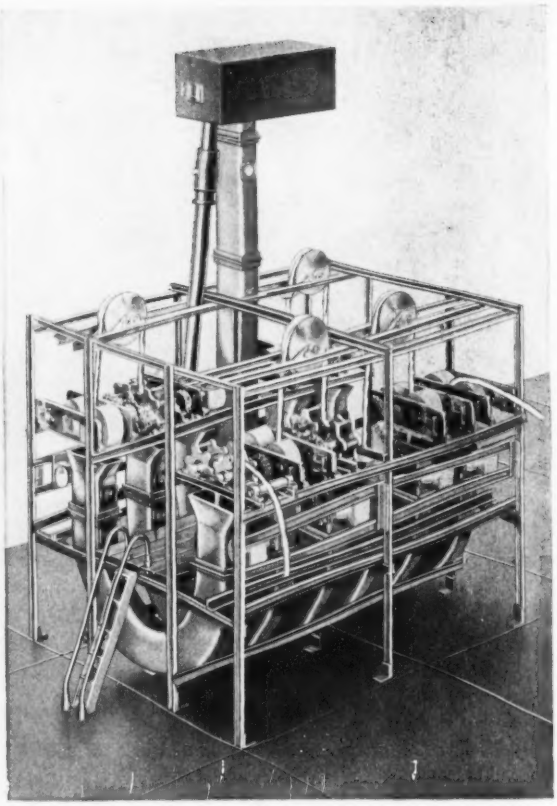
(4) At the end of the practice, the supervisor compares the "timing" of trainees with the actual times followed.

Almost any number of variations may be used on the gadget. The supervisor can, of course, vary his time schedule at will, as well as the sequence of "elements" followed. In other words, he can use bell, red light, white light, buzzer; then change to a sequence of white light, bell, buzzer, red light, etc. The possibility of variation is almost unlimited.

To begin with, duration or "element" times should be about 0.25 min. each, perhaps longer in some cases. Gradually, these times can be reduced so that the trainee is expected to time shorter elements, say down to 0.08 min. Similarly, the elements themselves should follow a more complicated sequence as the timestudy men become more proficient.

TRAINING VARIED. Use of mechanical aids in training are not new, but their present success suggests that per-

Butterworth Junior Bleaching Unit showing ease of control from operating floor in center of unit. Range includes "U"-type Washers, Saturator, J-box, reels, motors, instruments and auxiliary equipment.



Bleaching Economy starts at 300 lbs. of cloth per hour

You can put a Butterworth Junior Bleaching Unit to work profitably in your mill with a production of 300 lbs. of cloth per hour.

Junior is a *complete* bleaching range developed in conjunction with duPont for small production bleaching of knit goods or cotton piece goods. It gives the efficient small mill or the large mill running special lots the economies of continuous peroxide bleaching, including:

(1) Steam savings as high as 75%.

(2) Up to 10% saving in chemical costs.

(3) Only one man is required to run the Butterworth Junior Bleaching Unit compared with two men on conventional ranges.

The Butterworth Junior Bleaching Unit requires a floor space only 13 x 16 feet. The J-box is approximately 25 feet in height but this height requirement may be reduced somewhat by placing the bottom of the J-box in a pit below the floor line. Cloth is handled gently and efficiently with patented Butterworth tension control devices. Inspection windows permit easy checking throughout the bleaching operation.

For full details, write for Butterworth Bulletin 200.

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haps a new look should be taken at timestudy training in general.

The training given young trainees should be basic training for future company executives. Experience of several large Southern mills indicate that a healthy percentage of their timestudy engineers pass through the standards department to supervisor ranks or to production-executive positions. The teaching of trainees should have enough punch for the long haul ahead of the trainee, since education and new ideas are the timestudy man's stock in trade; and theoretically his education process never ends.

Foundation training in some mills include:

1. Thorough knowledge of company and policies.
2. Understanding of special policies governing wage incentives or those agreed upon with unions.
3. How timestudy department fits into the company organization.
4. Duties of department.
5. What does timestudy do?
6. How does it do it?

The first five of these factors may be taught by regular courses of lectures, discussions, and textbook study. Occasionally, one meets with an ingenious idea for teaching these basic fundamentals, such as in Phil Carroll's "Time Study Fundamentals For Foremen".* Mr. Carroll uses a true and false quiz procedure with an "automatic" score-sheet template that grades the answers. While the book is directed toward foremen, much of its content can be taught timestudy trainees.

THE "HOW?" The big task of timestudy training comes under factor No. 6, "How does it do it?"

Books and regular course of study are valuable in teaching the "how". But a far better job can be done by practical training. What are some of the things the timestudy men must learn from the "how" factor"? He must know:

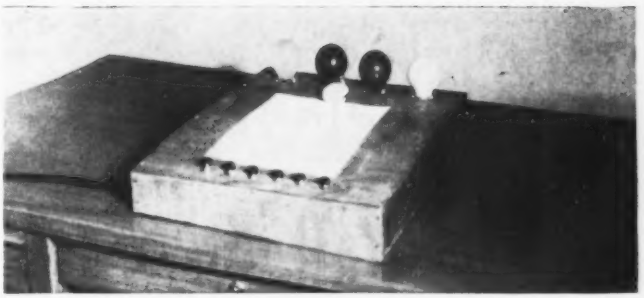
1. How to analyze a job, and break it into natural elements, or fundamental operations, so that it can be timed intelligently.
2. How to use the stopwatch accurately on these elements.
3. If a rating plan is used, how to rate worker performance consistently.
4. How to use the times of job elements as standard data from which time standards, incentives, or piece rates may be obtained to suit varying conditions.

The timestudy man's medium of exchange is elements. He must know an element when he sees one. He must know how to break a spinner's job into those natural operational elements such as "piece up end break", "creel", etc., and the weaver's job into "repair filling break", "patrol", etc. He must be so element-conscious that he can divide the tasks of any job, say a totally unfamiliar one, into the elements that can be timed and used for the construction of standard data and standard times.

Why this emphasis on elements? The timestudy man's knowledge of elements and their times and costs is the basis for his knowledge of the difference between a good method of working and a bad one. He knows that an element, however small, costs a specific amount of time and money. When a new machine or an improved method of operating an old machine results in the elimination of an element, the timestudy men can calculate the actual dollar savings. Or, when some policy of management's purchasing or technical policy results in the occurrence of an element of 100 times per day rather than the standard 50 times per day, the timestudy men can measure the result of that policy.

Therefore, the timestudy trainee must know how to measure these elements accurately before he is turned loose in the mill with a pad, pencil, and stopwatch. He must also be sure that his breakdown of the element is accurate. If, for example, he times the element, "insert quill," of a battery hand's job and carelessly includes part of her preparatory time in the time for this specific element, he has made a costly error. For the time obtained will be a standard time that will be multiplied by every occurrence of "insert quill" in a 1,000-loom weaving department. And the extra time carelessly included in the standard will be multiplied by those occurrences and will be paid for by the mill.

This is not to say that preparation time should not be included. It should be included in a separate element by itself so that it can be measured and paid for separately.



SWITCHES *for two lights, a buzzer, and bell enable supervisor to give timing and element-reading practice to timestudy trainees.*

VISUALIZE ELEMENTS. In addition to the gadget already described, there are other devices that aid the training of young timestudy men in the art of element breakdown. The standard pin board developed by Ralph M. Barnes of the University of Iowa is an excellent training device. It consists of locations for 30 pins which may be placed in varied positions as a demonstration of element breakdown and method. The same device may be used to check the performance-rating consistency of trainees. The rating of operator performance depends entirely upon the judgment of the timestudy man, and consistent results must be obtained from his ratings before his studies can be used for standards.

Element breakdown can be practiced also on pilot-mill or laboratory machines if these are available. Production machines should be used only as a last resort for this type of early training. It is possible also to build simple mock-ups of various textile machine subassemblies so that an "operator" can go through the motions of various important elements. Spindle assemblies of roving and spinning frames may be used to simulate actual production work, particularly for those elements such as "piece up break," "doff bobbin," "remove flyer," "wipe flyer," "thread flyer, wrap presser, and bobbin," etc.

With proper mechanical aids in training, the timestudy course thus includes practice as well as theory. It is no longer necessary to turn the young trainee into the mill's production department in order to learn the rudiments of how timestudy works. He should be element-conscious, accurate with the watch, and able to work up standard data long before the day when his supervisor says, "Go out to the card room and set up the job on those new drawing frames."

* McGraw-Hill Book Co.

Methocel:

the Well Known Thickener

The outstanding advantage of Methocel as a thickener is that *so little will do so much*. For instance, three or four per cent of high viscosity Methocel will thicken water to the point where it will not pour. Such effective thickening action is highly useful in the formulation of textile printing pastes, particularly with naphthol dyes.

Methocel's thickening qualities are also widely used in the production of resin emulsions for creaseproofing textiles. Because of its thickening ability, Methocel provides effective control over the penetration of the emulsion into the fabric. Further, Methocel also acts as an ideal stabilizer in the resin emulsion itself.

Because it forms an excellent, tough, flexible film, Methocel is particularly valuable as a sole sizing agent or as a size modifier. Methocel reduces abrasion, minimizes friction and reduces loom stoppage.

Send for your *free* experimental sample of the *new* Methocel, *powdered*. Just fill out the coupon below.

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THE new *methocel*

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Midland, Michigan

Please send free sample of METHOCEL, for use in_____

Check viscosity desired: 15, 25, 100, 400, 1500, 4000 cps.

Name and Title_____

Firm_____

Address_____

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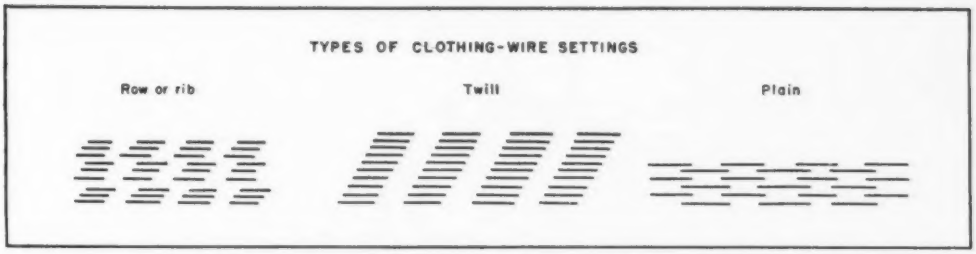
CHEMICALS INDISPENSABLE
TO INDUSTRY AND AGRICULTURE



THREE WAYS OF SETTING card-clothing wire are similar throughout the U. S., England, and the Continent

CARD CLOTHING Confusion Can Easily Be Cleared Up

HIGHLIGHTS: *Tables show differences between U. S., Continental, and English systems of numbering—Four types of wire in general use—Pitch in U. S. wire greater than that in Continental—Final results are quite similar.*

By GUSTAV ZELLNIK
Consulting Editor, TEXTILE WORLD

MUCH CONFUSION ARISES both in the U. S. and abroad due to the different terminology and different systems in use for designating card clothing used in carding wool. Many U. S. plants have some foreign cards; and throughout the world, U. S., Continental, and English cards and clothing are often found mixed in the same mill.

When transforming any measurement or weight into the metric system, nearly everybody knows that one inch is about 25 millimeters or that an ounce is equivalent to 28¼ grams, etc. But a direct conversion of card clothing numbers cannot be done because there is not a fixed constant. For a comparison of U. S., Continental, and English card-wire numbers, see the accompanying tabulation.

Table of Comparative Card-Wire Numbers

Diameter	U. S. No.	(Nearest Equivalent) Continental No.	(Nearest Equivalent) English No.
0.0084	37	30	35½
0.009	36	28½	34½
0.0095	35	28	34
0.010	34	26	33
0.011	33	24	32
0.013	32	22	31
0.0135	31	20	30½
0.014	30	18	29
0.015	29		28½
0.016	28	16	28
0.017	27	14	27
0.018	26	12	26
0.020	25	10	25
0.023	24	9	24
0.028	22	7	22
0.035	20	3	20

MOST CONFUSING is lack of similarity between U. S., Continental, and English numbering systems for wool card-clothing wire.

In a separate table is given a comparison of points per square inch. Only the U. S. and Continental systems are given—they are the ones in greatest demand; the English closely follows the Continental.

In card-clothing wire, there are four varieties. The most common is the round wire, then, in the order of their importance, come the double convex, the angular shape, and the single convex.

For fine and medium work, the round wire is most in demand; for coarser work, such as with carpet wool, asbestos, etc., the double convex is required. The angular wire is used mostly for napper clothing, angle strippers, and tumblers. The single convex is principally used for lickerin clothing. In Europe, there is a wire known as "sectoral wire" which is used in place of double convex.

PITCH. Continental wire has more pitch than that usually found manufactured in the U. S. In the U. S., the normal pitch for fine wire is approximately 70°; for coarser wires, 65 to 68° pitch is usual. The pitch in Continental wire ranges from 55 to 65°.

Comparison of Card-Clothing Points per Square Inch

No.	U. S. Points	Continental Points
28	273	234
30	315	273
32	357	315
33	408	357
34	456	408
35	504	456
36	528	504

IN POINTS per square inch, English figures closely follow Continental.

The total height of the wire staple, either in flexifort or other thin foundations, is approximately ⅛ in., with ⅛ in. taken up by the foundation and ¼ in. extending above the foundation. On a felt face, the height above the felt is approximately 5/32 in. with U. S. wire and ⅛ in. with Continental.

Settings are the same in all systems. There are three kinds: row or rib, twill, and plain (see illustration).

In the U .S. when ordering a 32/34 wire, one would mean a 32 wire with a 34 point. (Some work needs a strong wire with a fine point.) But on the Continent, a 32/34 wire sometimes means a 32 wire in a 34 setting.

The reason for having a 32 wire in a 34 setting is to have a strong wire very densely set in order to have a good and thorough opening of the wool and to eliminate impurities. The strong wire does not have too much strain; the larger number of points helps to do better carding. The cloth-

(Continued on page 216)

MOIRE EQUIPMENT

FOR PROMPT DELIVERY

Here is the equipment with which to cash in on the current moire mode.

This equipment is also used for Saran and other plastic textiles used for auto seat covers and other fabrics.

Included in the Hinnekens Moire line are:

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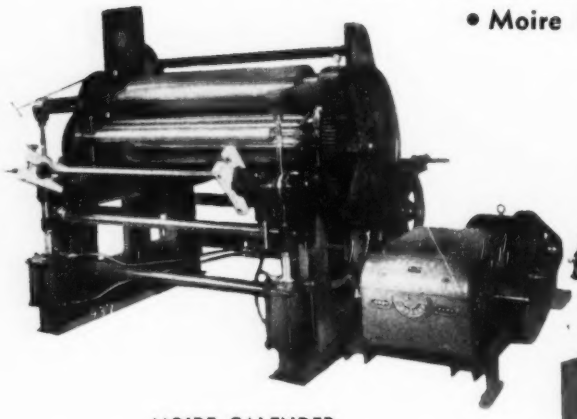
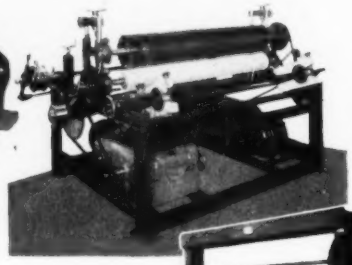
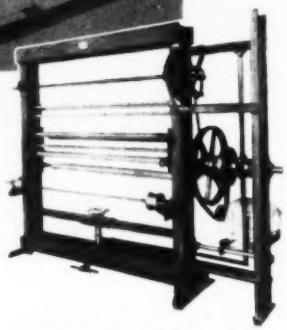


MOIRE CALENDER

Typical in engineering and construction of all Hinnekens Moire Machines, has heavy steel frame, air operated pressure controls, 12" or 16" chilled steel rolls arranged for gas or oil heating. Reeves variable speed drive.



MOIRE SCRATCHING MACHINE



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Do You Read TEST VALUES?

HIGHLIGHTS: *Analysis of skein-strength tests on 29s warp yarn shows how various test values are calculated—Increasing observations from four to 36 raises precision value of test only three times—Minimum observation important for processing value.*

TABLE I

CLARIFICATION of skein-break tests is sought in this table which evaluates importance of variance in breaks.

YARN TESTED: 29s, 1 1/16-in. cotton, warp twist, 3.50 twist multiple.

Test No. 1			Test No. 2		
Lb. break	Deviation from avg.	Deviation Squared	Lb. break	Deviation from avg.	Deviation Squared
62.5	+0.4	0.16	62.5	−0.6	0.36
62.0	−0.1	0.01	66.0	+2.9	8.41
61.5	−0.6	0.36	60.0	−3.1	9.61
63.0	+0.9	0.81	64.0	+0.9	0.81
62.0	−0.1	0.01	64.0	+0.9	0.81
59.0	−3.1	9.61	62.5	−0.6	0.36
65.0	+2.9	8.41	63.0	−0.1	0.01
61.5	−0.6	0.36	63.0	−0.1	0.01
62.1 avg. break	8.7 total deviation	19.73 total deviation squared	63.1 avg. break	9.2 total deviation	20.38 total deviation squared

TEST SUMMARY	Test No. 1	Test No. 2
Average deviation (8.7 ÷ 8)	1.09	1.15
Avg. deviation of mean (8.7 ÷ $\sqrt{8}$)	3.07	3.25
Standard deviation ($\sqrt{19.73}$ ÷ 7)	1.67	1.71
Coefficient of variation (1.67 ÷ 62.1 × 100)	2.69	2.71
Precision (3.07 ÷ 62.1 × 100)	4.95%	5.15%
Percent irregularity (1.09 ÷ 62.1 × 100)	1.76%	1.89%

CALCULATIONS TO DETERMINE test values appear unnecessarily complex to the average mill man. They need not be. They are the symbols by which the alert superintendent or overseer reads the results of mill-testing procedures. Probably the best way to clear them up is to analyze typical values from a report, starting back with the familiar average, or mean, of a number of observations.

The average has been used many times to express the value of a series of tests for yarn strength or counts. It means more as a measure of value than any individual observation and was more representative of the entire series. Yet, most mill men realize, in an abstract way, that by increasing the number of observations they could increase the precision of the test. Some assumed that precision or reliability was directly proportional to the number of observations covered by the test. However, statistical methods show that "precision is proportionate to the square root of the number of observations."

For example, take the test where four observations are made. An overzealous seeker for precision might extend the number of observations to 36 in order to increase the reliability of the tests. He may believe that a change from four to 36 would increase reliability nine times. But the square-root formula for estimating precision proves that when four observations are increased to 36, the precision value rises only three times, ($\sqrt{36} \div \sqrt{4} = 6 \div 2 = 3$).

Here we have a valuable use for the precision formula. It tells us how many observations to make. It checks on the economical use of observations by the laboratory. Generally, from eight to ten observations give reasonable reliability without the expenditure of too much effort.

ANALYZE VALUES. The skein-strength tests of 29s warp yarn have been used in Table I to illustrate various values and to show how they are calculated. Perhaps similar analyses should be made of other reports and circulated among the mill executives for better clarification of test values.

The first step in computing the data from the test is to get the average break or mean of all observation values in column 1. This is the sum of the observations divided by the number of observations.

Deviations (col. 2) are somewhat more complex. They mean the deviation from the average. There are both plus and minus deviations, those observations that are greater than the

(*Continued on page 230*)

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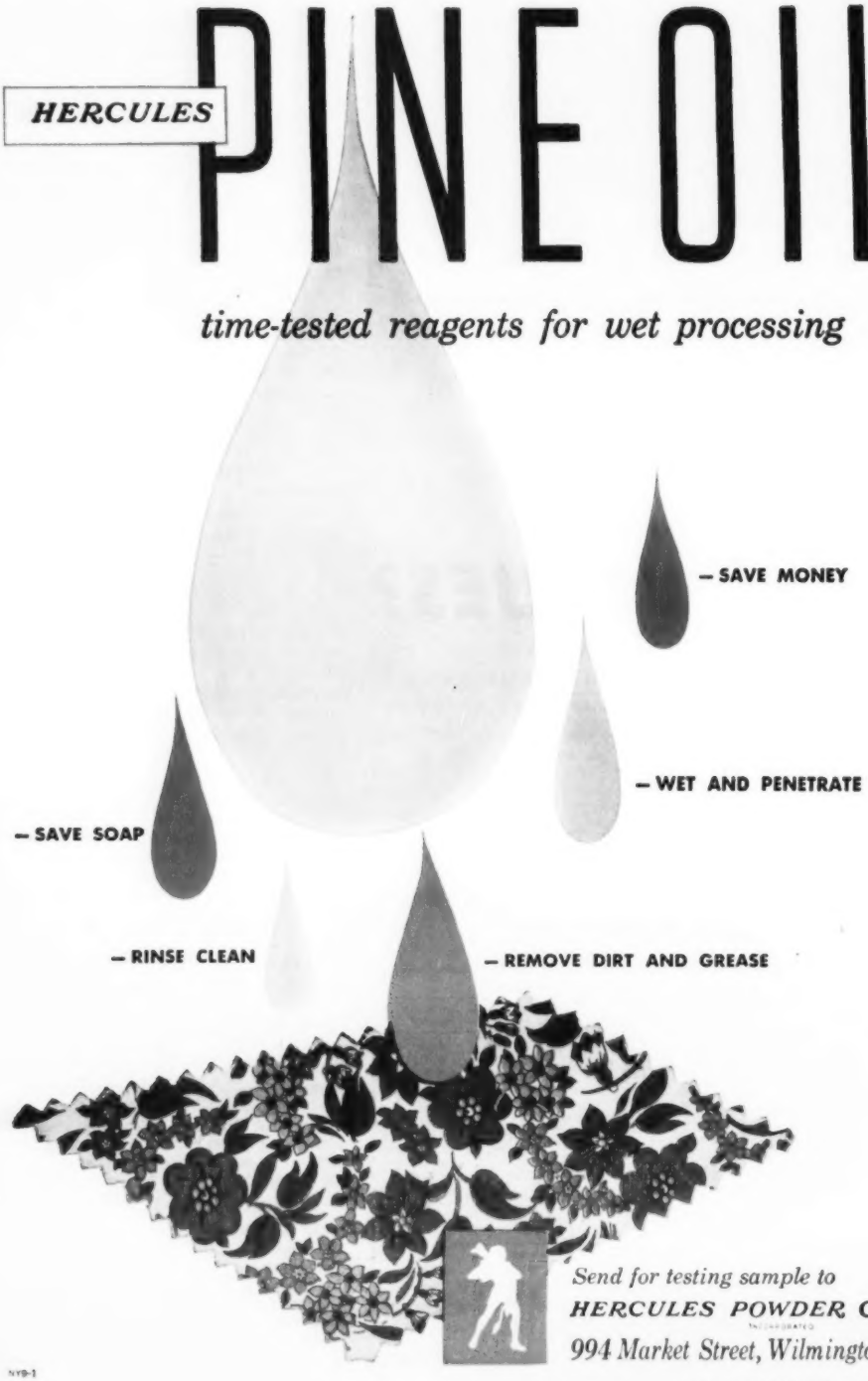

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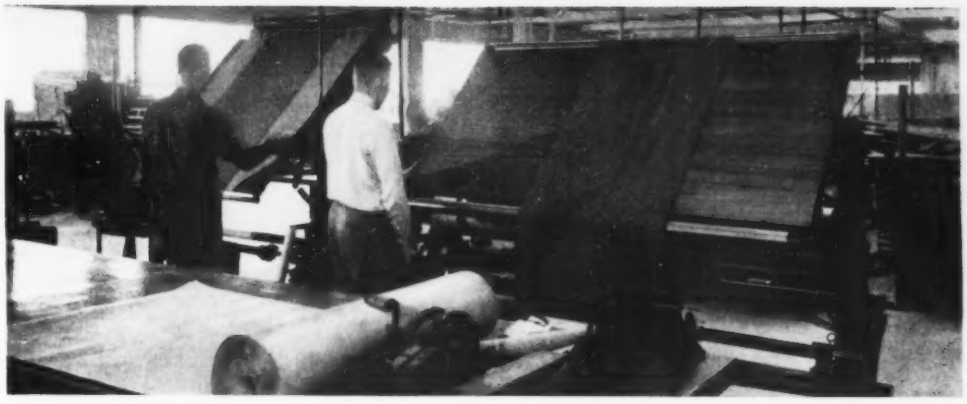


INSPECTORS of finished fabrics may examine to as high as ten different types of fabric in a single day. Such diversification is typical of an industry just getting started in a new part of the country.

FINISHING PLANT Paces West-Coast Textile Expansion

HIGHLIGHTS: *National Dyeing & Finishing Corp. in its new mill looks forward to ever-increasing activity in California—60,000-sq. ft., one-story plant has capacity of 30,000,000 yd. yearly—Warehouse, preparation, dyeing and finishing divisions are laid out with an eye to continuous flow.*

By RICHARD L. BEAN

National Dyeing & Finishing Corp., Culver City, Calif., is an example of a finishing plant which through diversity has been able successfully to locate in new textile territory. It is unique in the cotton-finishing field in that it finishes a great variety of fabrics, frequently running as many as 10 different constructions in a single day, at the same time that it is taking root in a previously undeveloped processing area. Today, the plant has three and one-third times its original 1941 facilities, with all activities under one roof, and spreading-out room for future years. It occupies 60,000 sq. ft. of floor space and has a capacity of 30,000,000 yd. a year.

The new mill, lying on a site measuring 378x362 ft., incorporates the latest ideas for clean, dry, and smooth-flowing dyeing and finishing. Roughly two-thirds of the space is used for the present buildings, including a separate boiler house. The entire plant is of red brick construction, with a truck-high concrete floor. The interior height is 14 ft. to the trusses.

Mill space is sectionalized into four divisions — warehouse, preparation, dyeing, and finishing. Separating the sections are walls, nearly truss high, of Transite corrugated-asbestos composition.

Overhead monorail carriers connect to all departments for easy handling of goods and machinery. Part of the steam lines are suspended overhead and part run underground. The entire space is air-conditioned, but improvements are necessary on the originally designed system because of abnormal steam and atmospheric conditions. The plant is skylighted with frosted glass. Fluorescent light augments the natural illumination. An overhead sprinkling system protects all four sections.

There is a straight flow in each of the four sections, with a wind-back from one section to another. With expansion, this arrangement can be continued, engineers believe, because future needs were taken into consideration in designing the plant.

At the north end of the mill area, close to executive and business offices, lie the chemical laboratory and color room, a 10-man machine shop equipped with power tools to handle all repairs, the power-panel room, and washing, locker, and shower rooms capable of accommodating close to 200 employees.

In the boiler room, the company is experimenting with 100-hp. Clayton steam generators instead of conventional boilers, and they are reported to be highly satisfactory. A bank of five generators can provide 150 lb. of pressure within two minutes. They are fired either with oil or gas, the latter for economy and oil for standby use. More generators will be added later to increase the steam-producing capacity.

Water is provided for by a tower holding a 22,000-gal. tank which stands in the courtyard adjacent to the boiler plant. Water softeners are located in the boiler room.

PRODUCTION FLOW. The wind-around production flow begins in the 10,000-sq. ft. warehouse section, along the west portion of the production building. Material flows from the warehouse to the adjoining preparation section, which contains 15,000 sq. ft. Starting from the south end of the section, it moves northward through the roll-up, singeing, desizing, boiloff, bleaching, and other preparation equipment.

At the end of this section, goods

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

Micarta Lap Rolls now in use in leading textile mills (names on request) are helping to step up production, cut costs.

Cut deadweight 46%

with Micarta Lap Rolls

Here's the dependable, lightweight lap roll the textile industry has been wanting.

Micarta research has produced it . . . in co-operation with Saco-Lowell Shops, world-renowned builder of textile machinery, and leading mills in New England and the South.

Extensive tests in actual applications have shown the Micarta Lap Roll to have these outstanding advantages:

1. **LIGHTWEIGHT.** Weighs 46% to 49% less than wood rolls. Elimination of this dead weight increases efficiency, boosts production 15% and more. Some mills are winding up to 3 lbs additional cotton on each lap. Workmen like the light weight of the empty rolls, are able to increase output. One mill found that a man can handle three machines instead of two . . . paid for Micarta Lap Rolls in a single year through resultant savings.

2. **RESISTS ABUSE** . . . won't chip or splinter . . . withstands the punishment of rough handling and increased loads. Maintenance is eliminated.

3. **FAST PICKUP** . . . picks the lap up *fast* . . . avoids overlapping and waste in the lap . . . gives more uniformity in the finished yarn.

For data and application help, consult your nearby Westinghouse office, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna.

Ask for a copy of Bulletin B-4359, which tells how Micarta Lap Rolls were developed, tested, and the advantages and economy they will bring to your operations. J-06432

Westinghouse **Micarta**

turn the corner to the dye house and commence passage southward. The dyeing section, 70 ft. wide, has 20,000 sq. ft.

DRAINAGE. Some wet-processing equipment has been set into pits linked to a mill-wide drainage system. The result is dry, clean floors, with insignificant exceptions; for runoff is carried through slat-covered cement drains, some 18 ft. deep, to a 30x30x30-ft. settling tank. There the drainage is neutralized before emission to sewers.

Eight Blickman stainless-steel, inclosed dye boxes have been installed in the dye section. They handle the bulk of the draperies, soft goods, and rayons.

Midway in this section stands a Morrison Microset padder, with pneumatic control and stainless-steel mixing tower. The padder is intended to be part of a continuous range running the length of the section, but the company is for the moment withholding any decision on subsequent equipment. In the allotted space, the first move will probably be either to Williams units or pad steam.

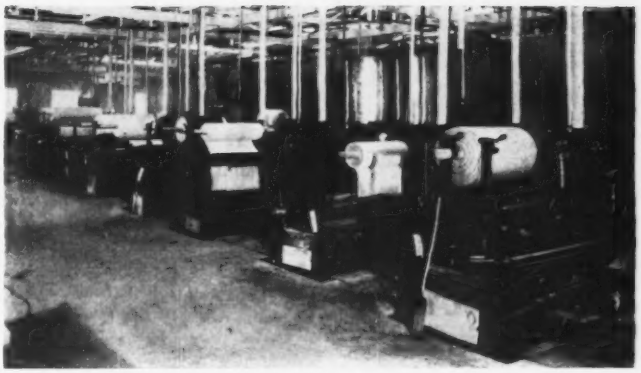
On the east half of the dye section, a double line of 22 jigs leads to a dryer with 42 107-in. stainless-steel cans, following a vacuum extractor. Adjacent to it is a 22-can dryer with a 60-in. face.

At the south end of the section is a National loop dryer with ten fans, for draperies and rayons. Additional padders, quetsches, and extractors are adjacent.

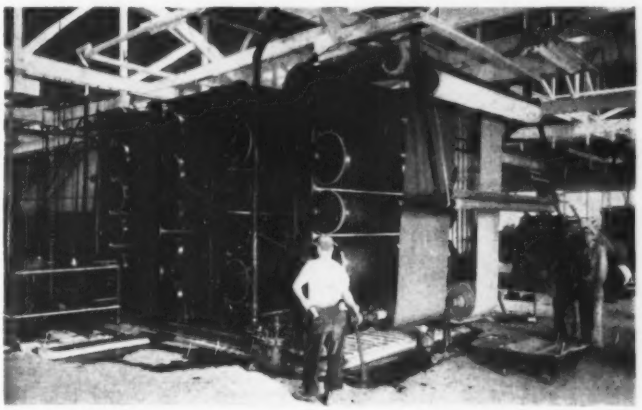
FINISHING. On the east side of the mill is the finishing section, 60 ft. in width and containing approximately 15,000 sq. ft. About midway in the section extends a 100-ft. 60-in. tenter frame equipped with an infrared drying device. Along the outer wall stands a Morrison Duplex Sanforized shrinker with a 60-inch drum. Since it was damaged in a fire in 1947, the Sanforized shrinker has been completely renovated, modernized, and put put into operation.

Standard examing, inspecting, folding, double-and-roll, tubing, and packaging machinery occupy the north end of the finishing section. It is but a few steps from this equipment to the shipping dock, which accommodates two trucks at a time.

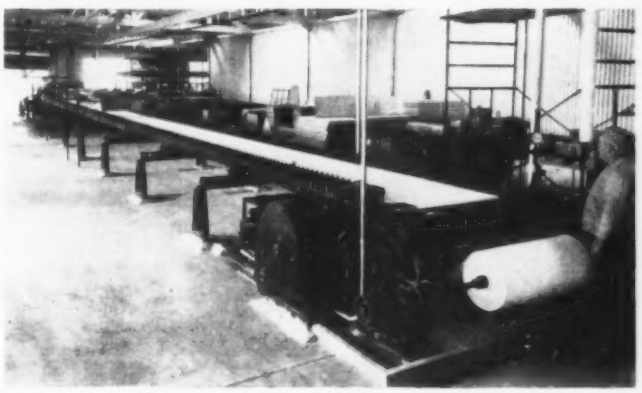
The two-story office building is of modern interior design. In clerical space on the first floor, round-cornered walls eliminate hallways and partitions, giving an air of privacy and departmentation. Executive offices, salesroom, and customers' reception room are on the second floor.



JIG-DYEING MACHINES are set in pits, covered by wooden-slat walkways to keep concrete floor clean and dry. Equipment in 20,000-sq.ft. dyeing section can dye dress goods, draperies, butcher linen, canvas, furniture lining, and nylon and Lastex for bathing suits—to mention only a few.



DRYER with 42 stainless-steel cans, 107 in. wide, stands at one end of the dyeing section. It uses a vacuum extractor. Nearby is a 22-can dryer with a 60-in. face. Slatted pit under equipment connects to a neutralizing sump.



TENTER FRAME, 100 ft. long and 60 in. wide, is located in the finishing section of the building and is equipped with an infrared drying service. Along the outer wall, not shown, is a Morrison Duplex Sanforized shrinker which has been completely renovated since a fire in 1947.

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a very **DESIRABLE, SOFT, FULL HAND**

durable to **WASHING AND DRY-CLEANING**

Unaffected by pH variations in the finishing bath—compatible with Resins—very resistant to yellowing, even at excessively high temperatures. Write for our technical service bulletin #208-110.1

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SLIVER cleanliness and uniformity can be obtained only by close maintenance in the card room.

Typical Card Settings

	General Practice	Range of settings
Feed plate to lickerin	10	7–17
Lickerin to cylinder	7	7–10
Flats to cylinder....Back stand	10	10–12
Flats to cylinder....2nd stand	10	9–10
Flats to cylinder....3rd stand	10	9–10
Flats to cylinder....4th stand	10	9–10
Flats to cylinder....Front stand	10	10–12
Doffer to cylinder	7	5–10
Top knife to lickerin	22	17–29
Bottom knife to lickerin	17	12–22
Angle of mote knives	15°	12°–22°
Lickerin screen....Front	29	28–34
Lickerin screen....Bars	12	10–22
Lickerin screen....Nose	3/16 in.	1/8 in-1/4 in.
Cylinder screen to cylinder....Front	3/16 in.	1/8 in-3/16 in.
Cylinder screen to cylinder....Middle	58	34–58
Cylinder screen to cylinder....Back	29	19–29
Back plate to cylinder....Top	29	22–34
Back plate to cylinder....Bottom	29	22–34
Front plate to cylinder....Top	22	17–34
Front plate to cylinder....Bottom	29	22–34
Doffer comb to doffer	22	12–34
Flat comb to flats	15	12–19

GOOD CARDING
Requires Precise Settings

HIGHLIGHTS: *Smooth picker lap a prerequisite—Lickerin, cylinder, and doffer should be frequently inspected and set exactly—Worn bearings, too wide settings of mote knives and screen, and faced or dull wire are among the causes of inferior quality and excessive waste.*

A GOOD PICKER-LAP is the first and most important requisite of good carding. It must be free from large seeds, leaf, and motes. It must have uniform weight and thickness in both length and width, even and unbroken selvages, and a smooth compact form that will unwind on the lap roll of the card without licking or splitting.

Feed rolls and feed plates, even though in perfect condition and correct adjustment, cannot feed a picker lap properly to the action of the lickerin if the lap has thick or thin places across its width. But feed-roll weights and levers can be checked to assure a uniform pressure between feed rolls and feed plates. The distance from the bite of the feed roll to the nose of the feed plate is important. It should be about ¼ in. longer than the staple of cotton being run. Correct setting of the selvage guides will prevent thin, ragged edges on the doffer web. Worn feed-roll bearings and gudgeons will often cause plucking of lap and the delivery of a lumpy, uneven sliver.

Frequent and close inspection of lickerins should be made. High and low spots, and bent, broken, or burred teeth will cause imperfect work. When lickerins are rewound, the grinder should be sure the finished job shows a full 9-in. diameter on wire. A smaller diameter will prevent a correct setting to the cylinder without shroud filing. This shroud-filing practice should be forbidden. Wire of coarser pitch should be avoided when re-winding. Standard lickerin wire runs about 36 teeth per square in., and any reduction in this number impairs the efficiency of the lickerin. Correct setting and perfect condition of mote knives and licker screen are essential for quality products.

The cylinder is the heart of the cotton card and the center of most of the important settings. The selection of the proper settings; its correct application to the surface of the cylinder; careful maintenance and grinding; and precise cylinder settings to lickerin, flats, doffer, front and back plates, and screens are the most important considerations in card-room management.

CARD WIRE. The numbers of card wire generally recommended for regular production are shown below. It is the usual practice to have doffers and flats wire finer by ten numbers than that of the cylinder. Cloth foundations are usually made of layers of cotton-wool-cotton or the much preferred cotton-cotton-wool-cotton. Rubber-faced fillet sometimes used on cylinders gives added resiliency to card wire. It is not recommended for use on exposed doffers.

The often-neglected cylinder bearing is the cause of much imperfect sliver. Exact settings cannot be main-

Come on in...

the water's fine!

Inevitably, every wool product of the not-far-distant future will be processed for shrink-resistance. Tomorrow's competitive markets will demand that wool products of almost every description assure true washability to command consumer acceptance and satisfaction.

MORE and more alert manufacturers are turning to Schollerizing for *practical, trouble-free* wool shrinkage control—

—— ——————— **because** of *simplicity* of application!

——————— **because** of the broad, flexibility of application!*

——————— **because** of consistent *uniformity* of results!

*Extremely flexible in application, wool may be Schollerized in raw stock, top, skeins, packages or fabric, before or after dyeing.

**Shrinkage controlled to within 2%

SCHOLLERIZING adds no foreign materials to the original wool—takes nothing from the wool. The character, appearance and weight of the original fibre remain unchanged. SCHOLLERIZING eliminates the primary cause of wool shrinkage—matting and felting—without any effect upon the inherent resiliency, elasticity, texture, feel or "hand" of the fabric while strength of the yarn is generally the same or greater than the original.

THE ANSWER TO YOUR WOOL SHRINKAGE CONTROL PROBLEM IS

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tained with badly worn bearings. A thin and narrow leaf-gage inserted between the top of the cylinder shaft and the bronze bearing can be used to detect excessive wear. A bearing showing more than 0.020 in. wear should be replaced.

Excessive wear of cylinder bearings can often be prevented by regular and proper lubrication. These bearings should be packed with a medium-hard grease, and the grease should be removed and replaced every three months. It is good practice to keep a small hole through the center of this packed grease direct to the cylinder shaft. A few drops of oil applied daily in this hole prevents caking of grease around shaft and assures a uniform film of oil on all parts of the bearing.

Flat-strip waste usually equals about 3% of the card production, and to a very large extent the nature and amount of this waste and the quality of the delivered sliver depend on the condition and setting of the flat wire to the cylinder. Dull wire and wire in poor condition will make excessive waste and a sliver of poor quality.

FLATS. Variation in the length of flat wire is a defect existing in many mills. This condition prevents proper and uniform setting of flats and causes a variation in the weights of strips taken from each flat. There are three general types of variation in flat-wire length:

1. Flat-to-flat variation, where the length of wire varies on adjacent flats on the same card.

2. End-to-end variation, where the length of wire varies on opposite ends of the same flat.

3. Variation due to rounded flats or loss of toe and heel. The original milling of the flat ends has been changed because of wear.

The causes of variation are many. One of these is flat deflection, which is the tendency of the flat to sag at the center because of its own weight and the manner in which it is supported at the ends. Deflection is much greater on a 45-in. card than on a 40-in. card. Dirty flat ends are another cause, and can be prevented by keeping brushes in good condition and properly adjusted.

Slack chains can throw the flats out of line when they enter the grinding stand. This condition may be corrected by raising the stretcher stands or removing one or more flats. Uneven elongation of flat chains may also cause variation in wire lengths. Other causes of trouble may be worn or improperly set cradles, shoes, slides latches, quadrants, or weight arms on the grinding stands.

Recommended Card-Wire Number For Regular Cotton Production

	Cylinder	Doffer	Flats
Coarse numbers (up to 20s)	100	110	100
Medium numbers (20s to 60s)	110	120	120
Fine numbers (60s and up)	120	130	130

Recommended Types of Cotton And Rates of Production For Different Kinds of End Product

	Staple	Grade	Yarn	Card Production
Twines, ducks, insulating yarns	3/4 to 1 in.	SLM to G Ord.	4s to 12s	11 to 12 lb. per hr.
Sheetings, drills, coarse knitting yarns	7/8 to 1 in.	Mid. to SLM	12s to 20s	10 to 12 lb. per hr.
Prints, percales, twills	1 to 1 1/8 in.	SLM to SM	20s to 30s	8 to 10 lb. per hr.
Shirtings, shade cloth	1 5/32 to 1 3/8 in.	Mid. to SM	30s to 50s	7 to 10 lb. per hr.
Combed yarns, underwear, hosiery	1 5/32 to 1 1/4 in.	Mid. to GM	30s to 70s	5 to 8 lb. per hr.

Flat-grinding bands which are too tight will prevent the drum grinding-roll from taking the proper position in the grinding stands. The incorrect position will cause one end of the roll to rise from the stand and may result in wire-length variation. Dull emery, or hard spots in the wire, may also cause unevenness.

The tell-tale indications of flat-wire variations are a cloudy web and a large variation in the weight of individual flat strips from the same card. High flats should be marked and used as the basis for setting at each setting stand. Facing of wire results when low flats are used as basis for setting. There is only one correction for high and low flats: remove them from card and grind on a flat grinder.

DOFFER. The card doffer may be considered to do little toward cleaning and parallelizing the fibers delivered to it by the cylinder, but its function of condensing the thin web and of delivering a uniform sliver to the coiler are important. The condition of the doffer wire must be good, and its setting to the cylinder must be correct for good quality. It can be said truthfully that improper doffer-to-cylinder settings are responsible for more inferior carding than any other setting on the card. Too tight

(Continued on page 226)

Common Carding Defects And Points to Check

For Variation in Sliver

Check:
- Lap guides
- Feed-roll weights
- Worn feed-roll bearings
- Feed-plate settings
- Tension between doffer and 3-in. calender roll
- Draft between 3-in. calender roll to coiler calender rolls

For Rich Lickerin Waste

Check:
- Setting of knives to lickerin
- Screen setting
- Excessive lickerin speed

For Excessive Flat Strips

Check:
- Setting of front and back plates
- Setting of flats to cylinder
- Bent front plate
- Damaged wire

For Excessive Cylinder Waste

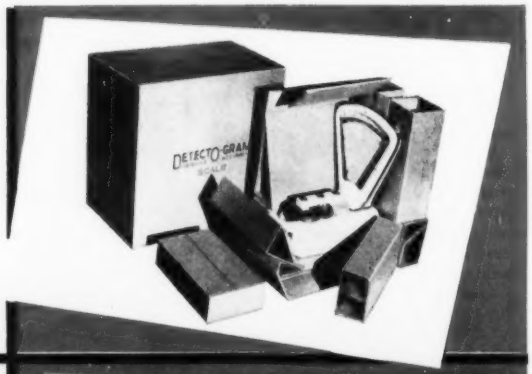
Check:
- Screen settings
- Stray air currents
- Broken screen bars
- Rough spots on screen
- Adjustment nose of lickerin screen

For Cloudy Webs

Check:
- Air currents
- Loading of cylinder
- Dirt and oil on screens
- Damaged wire
- All settings
- Excessive production
- Unremoved card fly

SHOCK-PROOF SHIPPING BOX

You can't take chances in shipping delicate, precision equipment. If such equipment is damaged in transit, your customer will probably look elsewhere the next time he places an order. Whatever your product, the H & D Package Laboratory can work out a safe, dependable, economical packaging method that will protect your goodwill . . . and your profits!



Use the LUGGAGE BOX for Extra Sales Appeal

Promotion of seasonal merchandise is but one of many successful applications of the H & D luggage box. Use it to add extra value to your product, to win extra sales appeal. It makes your product easier to carry, easier to use. Your dealers will endorse it—because it displays well, simplifies the selling job, reduces selling costs, eliminates repacking and wrapping.

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PLYPAK* is a corrugated packing material that combines several thicknesses of corrugated paper to form a protective "blanket" which is ideal for packaging fragile merchandise. Clean and easy to handle, PLYPAK* is simply "wrapped" around a product, gives it a soft, close-fitting cushion that defies shock. Ask for sample.

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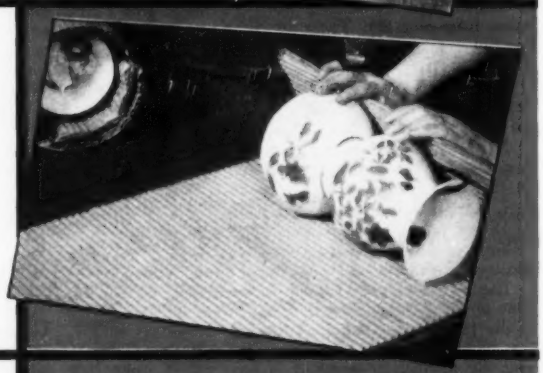

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Emulsion Important On Cotton-Wool BLENDS

HIGHLIGHTS: *Wool fiber requires agent to increase pliability—Heat helps mixing of emulsion formula—Control of percent of each fiber in blend is important, must be found by trial.*

By E. H. HELLIWELL
New England Editor, TEXTILE WORLD

MAINTAINING GOOD-RUNNING WORK and a high-quality uniform product has always been a problem in making cotton-wool blended yarn for knitting and weaving. Blending the coarser wools with either carded or combed cotton offers greater difficulties than blends with finer wool. The diameter of these fine wool fibers more closely approaches the diameter of the cotton fibers and therefore mixes more readily and gives a more uniform blend.

Numerous tests, experiments, and methods have been tried in many mills to overcome or reduce the difficulties of making uniform blends. Oil compounds of varying compositions and consistencies have been recommended, tried, and generally found lacking. Steaming and other methods of applying moisture at some point in the processing have been tried and found unsatisfactory in some detail. Mineral conditioning oil, used so successfully on all-cotton mixes, failed to give the desired results on cotton-wool blends.

PROBLEM ANALYZED. A careful analysis of all the factors and difficulties involved in making cotton-wool blends led to the following conclusions. The cotton used in the blend required no additional treatment than that usually given if the relative humidity was maintained between 55 and 60% with suitable temperature above 70° F. The wool fibers needed the addition of some agent to increase their pliability and to insure uniform drafting when mixed with the more pliable cotton fibers. This agent, to be effective, must penetrate the fibers, retain its moisture content, and furnish fiber lubrication and softening through all the drafting processes. The amount required must be small to prevent gumming and other operational troubles. Application of the agent must be in a uniform and carefully controlled manner.

The fiber-lubricating properties of high-grade wool oils are well known in woolen manufacture. One of these (trade name SS) was tried and found partially effective. Emulsions were made with varying amounts of water with improved results. The addition of a small amount of water softener increased the absorption, penetration, and moisture retention.

EMULSION FORMULA. After many tests and actual trials of stock treated with varying amounts of the different ingredients, the following formula was adopted as standard. This gave the best consistent results and overcame all the difficulties encountered with stock treated in other ways.

SS Wool oil	8 gal.
Water	52 gal.
Water softener	20 oz.

It was found that the addition of a moderate degree of heat (130° F.) aided in mixing and applying the emulsion. For this purpose, live exhaust steam was admitted to the mixing tank to maintain temperature. The specified amount of water was run into the tank, heated to the required temperature, the wool oil added and thoroughly stirred, and then water softener was dissolved in the emulsion and mixed well.

The combed wool was received in the form of tops. This was run through the staple cutter and cut into 1¼-in. lengths and delivered into the hopper of a two-section W3 waste mixer. Two spray heads were placed in this hopper and connected with a 30-lb. pressure air line. A small electrically driven pump was metered to deliver 5% of oil to the spray heads. This percentage was estimated on the production of stock run through the machine.

Oiled wool stock from the waste mixer was blown into storage bins behind the Bramwell feeders on the wool cards. Stock, fed by hand from the bins, was run through the wool cards; and two slivers of 110 grains per yd. each were delivered from the doffer.

Wool sliver was run through one process of drawing. Sliver delivered was 62 grains per yard. The blending was done on the back of the cotton-process breaker draw frame. A total of six ends were fed in. The number each of cotton and wool ends depends on the percentage of wool required in the yarn. This percentage varies on different orders from 25 to 75%, with 50% most frequently called for.

PERCENTAGE CONTROL. This percentage control is very important. A blend specified for a certain percentage of wool must be held within close tolerances for wool content. Any excess of wool over the specified amount means a loss to the mill due to the higher cost of wool over that of cotton. A reduced amount below a certain tolerance is sufficient cause for rejection of the yarn or the finished goods. Routine chemical tests are made of all blended yarns in the laboratory. Prompt reports made to the processing departments show the exact wool percentage in all blends being made. All changes are made on the proportionate amounts of wool and cotton sliver fed into the back of the breaker drawing. Allowances must be made for the difference in feeding rate of the two different fibers. The percentage weight of each kind of fiber in the delivered sliver will not always equal the percentage of the total yard weights of slivers in back of breaker drawing. Different stocks and blends act in a different manner, and these percentages can only be determined by trial.

Different numbers of wool may require different amounts of oil. Usually the coarser wools require more oil than the finer wools. Pulled and scoured wools may need some changes in the formula to get the desired pliability for processing and blending. An additional amount of water softener may be advisable for penetration, but excessive percentages of oil should not be used if gumming is to be avoided.

The stock treated with this emulsion was run through the finisher drawing from the blending breaker drawing. It was then run through conventional slubbers and fine frames. Double roving was run on long-draft spinning frames making 21s yarn.

3 important additions

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How the Management Team Can Build Better Human Relations

Pointers FOR SUPERVISORS

Mr. Overseer — Counseling Is For YOU!

HIGHLIGHTS: *Supervisors should realize role as counselors and develop skill in counseling—Listening is most effective method—Careful questions can help workers solve own problems—Counseling is not time consuming, but can be done anytime, anywhere.*

By ***HUDSON NIX***

YOU, MR. SUPERVISOR, must be a man of many skills. You must direct, teach, be a good example, and possess technical knowledge of the operations you supervise. You should also develop skill in the art of counseling.

If you do—if you realize that you, not the fellow in the personnel department—can be the counselor—you can produce outstanding results in the operation of your department. This skill in counseling can be developed!

You are the member of the management team who is closest to the workers. As such, you can play the most effective part of all in developing sound human relations. By developing skill in counseling, you can influence production, attitudes, and costs in your department. At the same time you will increase your stature in the organization and improve your reputation among employees.

What are some signs of the need of counseling? Absenteeism; low production; mistakes; broken rules; grievances; poor morale or indifference; dissatisfaction with pay, shift, work assignments, or associates; accidents—they all indicate that counseling treatment is needed.

Brushing up on your own skill and acquiring new skill in counseling methods does not mean that you will start delving into the personal problems of your employees. You will not horn in on problems requiring the service of professionals such as in law, medicine, religion, or psychiatry. You will not become a busy-body, nor an amateur Freud.

Counseling, in the minds of too many supervisors, carries too much suggestion of advice-giving, too little emphasis on listening. Listening is the most effective method yet discovered for working with individuals. Listening proved amazingly effective in dealing with emotional stress and moral crisis encountered by men in World War II. You may use listening just as effectively to combat safety-rule violations, these short-cuts that affect quality, fear, suspicion, or co-operation in your department. But really listening is usually one of the hardest things for a person to do.

THE GOOD LISTENER. Since listening is the most important part of the counseling process, some attributes of the good listener can be defined.

To listen effectively, you must maintain control so that your own emotions and prejudices do not project into the situation. To be a good listener, you must relax; you must be interested but not eager. Your comments and attitude must express no shock or anger; you should not condemn or condone; your voice must remain calm, natural.

Your whole manner must suggest understanding, curiosity, or real sympathy—without either preoccupation, curiosity, or sentimentality. As an effective listener, you must have emotional poise: maturity, courage, health, quietness of soul, faith, happiness. Being apprehensive, afraid, worried, nervous, uncertain, unhappy, or bitter will make you ineffective as a listener.

Incidentally, conditions bearing upon your own mental health should not be considered merely because of their importance in counseling employees. The mature, well-balanced personality that is capable of building up understanding in counseling relationships is also the personality best-equipped to promote his ideas, to sell his ability, to meet emergencies and new situations. All of the "tools" acquired for use in your "counseling kitbag" can be used with telling effect in every other area of supervisory responsibility.

You will miss many opportunities for profitable listening if you do not have a "listening attitude." If you are brusque, if you maintain a "too-busy-to-be-bothered attitude," if you

(Continued on page 232)

Counseling is Mostly Listening!

Employee counseling is not as hard as it sounds. The term seems to be part of the gobbledygook of human relations left by the last war. As Mr. Nix points out in this article, the term wrongly suggests advice-giving. More correctly, counseling means listening most of all. It means letting the other fellow blow off steam—get his gripes off his chest—cry on someone's shoulder. If you've ever written a hot letter to get a gripe off your chest, then torn the letter up (we hope), you've done some self-counseling. Even as it helps you to blow off steam occasionally, the safety valves of counseling can help your workers.

Counseling setups range from the program of an industrial psychologist with a trained staff, to the counseling program that is the definite responsibility of the personnel department, to counseling where the supervision, with or without a counselor especially instructed and guided, takes care of the program. In each of these programs, the line supervisor must play a vital part. He is the one who is closest to the worker whose production, problems, attitudes, waste, and safety the program of counseling is set up to improve. To help him in this dynamic role, we present an article especially written for mill supervisors. Stripped of psychology-textbook language, the article contains information that most supervisors can use without delay.

The author is Hudson Nix of the Personnel Department of the Rome, Ga., plant of Celanese Corp. of America. The article is based upon special study and 16 years of mill experience. Mr. Nix began as night-shift helper, progressed to clerk, then to employee-magazine editor, and now is employment administrator.

He's a thief of the "sneak" variety – pilfering, robbing, stealing valuable production from machines in thousands of plants. The cost of his thievery is staggering – but he *can* be stopped!

You may not even suspect that he's at work in your plant. You may have to *look* close to find him. But there's a big reward when you do.

For example . . . here are some places to look.

Are you still using the old-fashioned "hand and paddle" method of filling grease guns – wasting time, wasting grease, risking grime and dirt? *There's a thief!*

You can save $3\frac{3}{4}$ man hours for every 100 lbs. of grease.

Are you lubricating machines the hand and muscle way? *Watch for losses here!*

You can save up to 23.9 man hours in applying each 100 lbs. of grease.

What about "down-time"—production interruptions for lubrication, or for part replacements due to faulty lubrication? *More thievery!*

You can lubricate hundreds of bearings from one central point, with the right amount of lubricant, while machines continue to produce.

Now are you suspicious that a production thief is working in your plant?

His disguise is "old-time, hit-or-miss, costly lubrication methods" that add to the costs of production.

There's one proven way to stop this loss.

An Alemite representative can tell you in 10 minutes how Alemite Methods will simplify and better organize your lubrication procedures. He can show you how mechanized lubrication from barrel-to-bearing will increase your production and profits.

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MODERN LUBRICATION METHODS THAT CUT PRODUCTION COSTS

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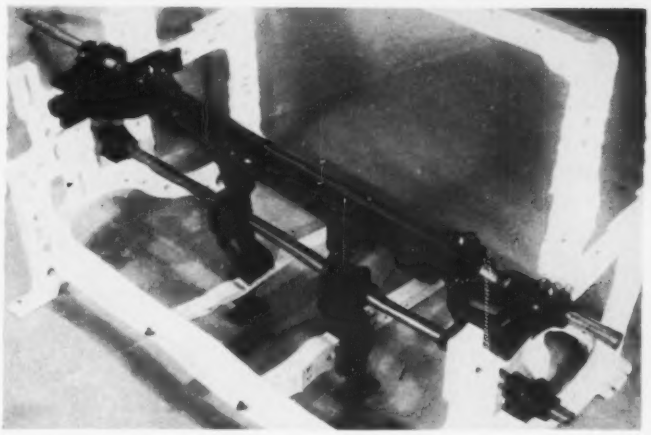
TEXTILE Equipment NEWS

New Loom Girt Boosts Weaving Speed

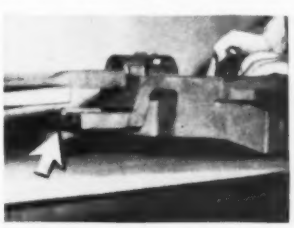


LOOM STABILITY and speed are increased by the use of this new top girt which is said to use a new principle of alignment on the crankshaft.

A new high-production top girt for Model E looms has recently been developed and installed in some Southern cotton mills by Bahan Textile Machinery Co., Greenville, S. C. The girt was designed to meet mill requirements for a top girt or crankshaft support that would give maximum rigidity and complete flexibility of installation.

The new girt replaces conventional crankshaft bearings with a pair of end sections that consist of two bearings in each end section: one on the outside of the crank throw and one on the inside. Each end section is designed to support adequately the crankshaft and also to spread the force and vibration from the crankshaft over a greater area of the loomside.

Employing a new principle for alignment, the two end sections are connected with a rigid center girt which maintains the alignment of all four bearings through the use of a large, machined, flat surface, and the use of a heavy, rectangular key and keyway. This new alignment is said to guarantee accuracy in both planes and to enable the girt to be installed without shims or hand fitting.



NEW KEYSEAT is machined flat and keyweyed for accurate joining of the section of the new top-girt assembly.

All weight is said to rest on the top of the loomsides in order to eliminate any shearing action on bolts through the side of the frame. All four crankshaft bearings are bronze-bushed and grease-lubricated. Because of the method of alignment and fastening used, as well as the close 0.005 in. tolerance of the bearings, the alignment is said to remain true.

The Bahan Textile Machinery Co. states in its application for patent (pending) that the construction of the new top girt, and the close tolerances between crankshaft and crankshaft bearings, give the loom a greater area of bearing surface. Along with the method of alignment, these construction details are said to give longer life to bearings and to reduce friction losses to a minimum.

The Bahan girts are installed on looms with two upright supports from the floor to the center section of the girt. On the supports are two grease-lubricated bearings for the cam shaft.

All conventional types of stop motions can be used, and proper brackets are furnished for the various types. Complete range of adjustment is said to be possible since the girt does not interfere.

One important advantage claimed for the new girt is that vibration is dampened to such an extent that a loom can be run at considerably higher speed and still be smoother in operation than the same loom at slower speed without the support of the unit. All new girts are completely assembled and factory tested before shipment. They are shipped with a new crankshaft in order to guarantee positive alignment at installation.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-80.

New Wool Card Has Large-Size Doffers

A new wool card has been developed by Newport News Shipbuilding & Drydock Co., Newport News, Va. One of the company's cards has been in operation at Forstmann Woolen Co., Passaic, N. J., for over a year.

The Newport News wool card is a three-card set consisting of a breaker, intermediate, and finisher card. The machine is equipped with a wide range of speed adjustments at all points, thus enabling it to accommodate all types of materials and to make roving from the coarsest to the finest counts. Machined rolls are accurately mounted, permitting uniform close setting of the workers and strippers. Another feature is the low over-all height for unobstructed vision over the machine and ready removal of workers and strippers. Close-fitting covers are provided for the fancy rolls. The machine will produce a greater yield through minimum loss of stock, the manufacturer states.

The breaker-card unit is arranged with an automatic feed having a hopper of large capacity and a very accurate weighing mechanism; also a metallic breast assembly. A side-draw conveyor handles long or short fibers.

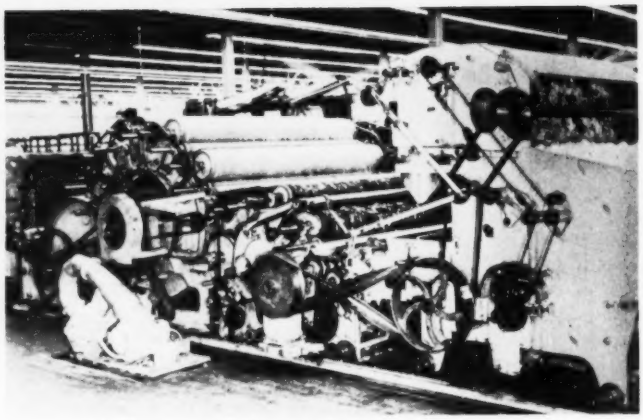
The intermediate card includes a broad-band feed for thorough blending, designed to effect better manipulation and more economical use of stock, and a side-draw conveyor.

The finisher card also includes a broad-band feed and is followed by a

tape condenser of a special design said to feature positive and even division of the web as well as tapes which do not steal from each other.

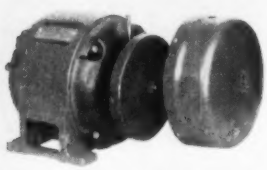
Each of the card units features a large doffer for better carding, which results in stronger yarn at higher production rates in addition to less frequent machine downtime for stripping.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-107.



LOW OVER ALL HEIGHT is one of the features of this new wool card.

Flywheel Motor Improves Loom Operation



SMOOTHER LOOM OPERATION and increased speeds are possible with this new flywheel motor.

A new line of totally inclosed flywheel loom motors, incorporating the unique speed and torque characteristics of G-E cast-frame loom motors, has been announced by the Small & Medium Motor Div., General Electric Co., Schenectady 5, N. Y. The new motors are specifically designed to improve loom operation, reduce power costs, and increase loom speeds.

Outstanding feature of these motors is an integrally mounted flywheel. This flywheel, by reducing the peaks and valleys of speed and current, is said to reduce both power losses and power consumption, providing smoother loom operation and often making possible increased loom speed without increasing motor horsepower rating. With properly selected flywheels, 1,200-rpm. motors will deliver a performance equivalent to 1,800-rpm. motors, the company states, thus permitting changing—particularly increasing—loom speeds in smaller increments and using larger and stronger pinions. The resulting smoother loom operation is said materially to contribute to reduced down time and maintenance requirements. In addition, this flywheel is so designed that the over-all length of the new motors is only slightly more than that of the conventional loom motor, thus conserving valuable aisle space.

Furnished in ratings from ¾ to 2 hp., 1,800 to 1,200 rpm., the motors are designed to withstand the rigorous characteristic of loom service. The totally inclosed construction protects the windings and punching from lint, dust, and foreign matter generally. The integrally cast rotor fan distributes motor heat evenly without localized frame hot spots. The convenient location of the oil fittings facilitates easy and thorough lubrication. The motors are designed to be easy to install and maintain.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-106.

Automatic Quiller Makes Variety of Packages

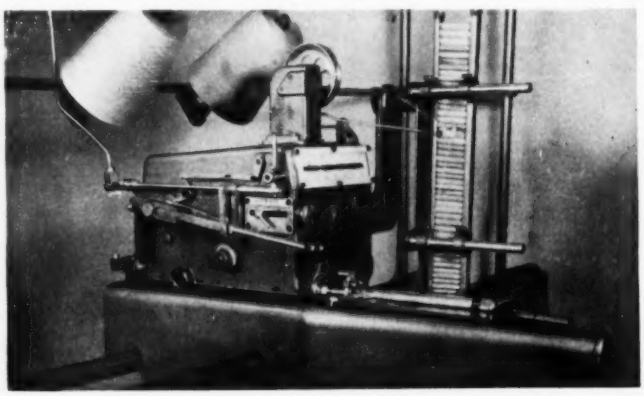
Length of package, degree of taper, traverse crossing, and yardage of yarn can all be varied widely in the new automatic quiller being built by Muschamp Taylor, Ltd., Manchester, England. The machine is called the Muschamp Autoquill.

Traverse length is adjustable, but four cams are offered to obtain the full range of strokes. Lengths possible are ⅛ to 2⅜ in. with cam No. 1; 1⅜ to 2¾ in. with No. 2; 1⅞ to 3½ in. with No. 3; and 2⅜ to 5½ in. with No. 4. Maximum package diameter is 2 in.

Degree of taper is adjusted by means of a scaled dial on the side of the control housing. Straight sides can also be built and small flanged bobbins can be wound.

The number of traverse crossings is varied by means of a series of wind pulleys and an "expanding" pulley. Range is from a very open wide to "parallel."

Yardage can be measured either by the number of spindle revolutions or by means of a measuring wheel. When a predetermined yardage is reached,

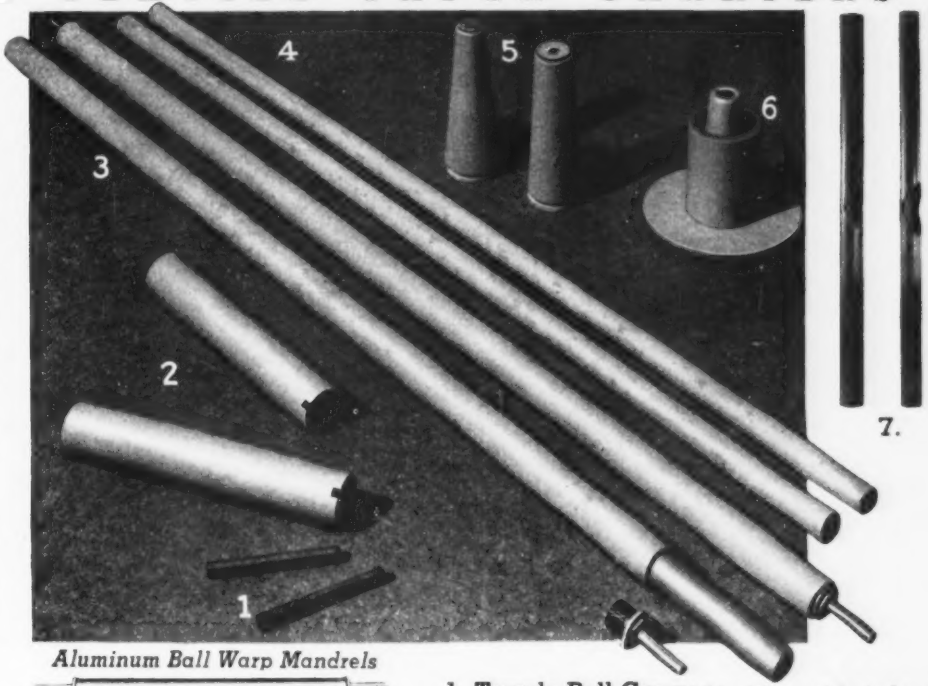


ADJUSTABLE TRAVERSE SCALE can be seen on the side of the winder head. Four cams give four ranges; minimum length is 13/16 in.; maximum, 5½ in. Magazine is widely adjustable.

SONOCO *Makes Everything in*

TEXTILE PAPER CARRIERS

SPECIALTIES

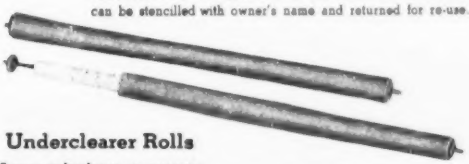


Aluminum Ball Warp Mandrels

A new Sonoco development is aluminum ball warp mandrel adaptable for either Cocker No. 500 High Speed Warper, No. 130 Entwistle or the Twin Traverse. These mandrels, which weigh only 12½ pounds, are all designed to take a standard Sonoco ball warp tube.

Ball Warp Tubes

Our standard ball warp tube is 35¾" x 3" x 3½" to fit the Sonoco aluminum mandrel. Results indicate more uniform, smoother running than with wooden rolls and with less vibration and fewer ends down. Tare is uniform for each roll at 3 lbs. Rolls can be stencilled with owner's name and returned for re-use.



Underclearer Rolls

Sonoco underclearer or scavenger rolls are widely used for their economy and efficiency. A velvet surface paper tube is fitted over a wooden core secured at the ends by hard fibre washers held in place by removable pins. When cover wears out (20,000 hours or more), it is slipped off the core and replaced at a fraction the cost of a new roll.

1. Temple Roll Cores: A treated paper tube used as a core for temple rolls. Sonoco's impregnation process makes the cores resistant to moisture and high humidity, thereby assuring excellent performance.

2. Roving Tubes: A paper tube used for shipping roving or to put yarn in stock. Saves tying up wooden bobbins. Roving tube slips over wooden bobbin for winding.

3. Topping (Thompson) Rolls and Covers: A replaceable velvet surface paper tube on a permanent core, secured with removable ends—for picking up fly waste on front of cotton card.

4. Card Clearer Roll Covers: A velvet surface paper tube that fits over the card clearer roll, commonly known as the dust roll. Easily replaceable when worn out.

5. Cork Covered Cones: A permanent wooden cone covered with layer of cork—widely used for magazine creeling by plants spinning their own warp yarn.

6. Rayon Cake Forms: Designed as a cake holder for use on machines using rayon wound in cake form. Prevents cake from collapsing as yarn delivers to machine.

7. Tie-in Tubes: An inexpensive paper tube affixed to the loom for convenient holding of tie-in threads, finished in a bright green color.

SONOCO 50th ANNIVERSARY YEAR SERVES THE WORLD

SONOCO PRODUCTS COMPANY

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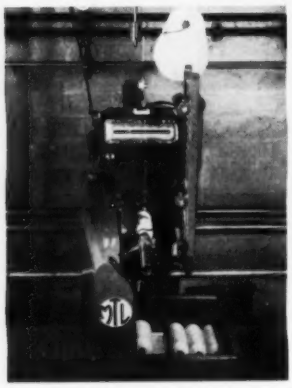
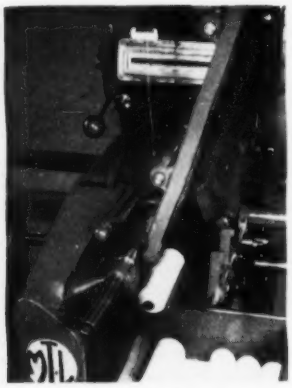
DEPENDABLE SOURCE OF SUPPLY

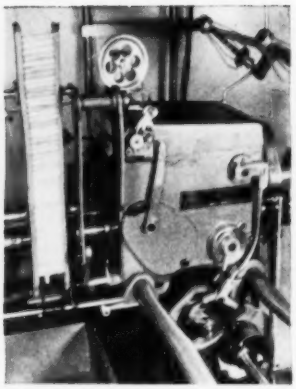
Autoquill Winder Has Many New Features



BACK-PLATE PRESSURE is adjustable in the Autoquill winder. Measuring scale is just under measuring wheel. Magazine, at right, is vertical during winding operation.



MAGAZINE IS INCLINED here in order to present a new empty bobbin. Below it, a filled tube is being transported by a "mechanical hand."



TAPER-END ADJUSTMENT dial is just below the nameplate. Ratchet above it to the left is part of measuring device. Above the control box, not shown, is a yarn stop motion.

the machine automatically changes packages.

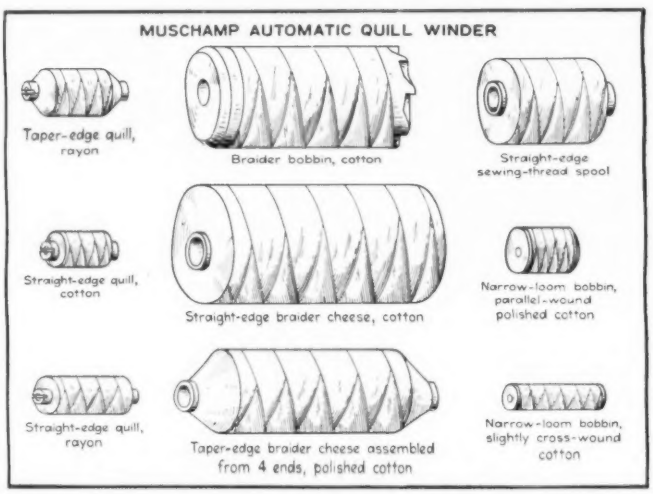
A gripper holds the yarn during the change of take-up packages and is reported greatly to reduce stoppages due to loss of the yarn end during the transfer.

The empty-bobbin magazine holds 40 average-size parallel tubes. It is widely adjustable to take anything from small quills to large braider bobbins. A magazine creel is supplied. Gate tensions and a single-end stop motion are standard. The machine can be equipped to double up to four ends, if desired.

For cross-winding quills, speeds up to 3,500 rpm. are claimed; for parallel-wound bobbins, up to 5,000 rpm.

Each spindle is a single unit. The spindle proper is driven by a fast and loose pulley at the rear. There the gainer drive to the cam spindle is also mounted. Maximum recommended number of units to a frame is 20.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-82.


MUSCHAMP AUTOMATIC QUILL WINDER
Taper-edge quill, rayon
Braider bobbin, cotton
Straight-edge sewing-thread spool
Straight-edge quill, cotton
Straight-edge braider cheese, cotton
Narrow-loom bobbin, parallel-wound polished cotton
Straight-edge quill, rayon
Taper-edge braider cheese assembled from 4 ends, polished cotton
Narrow-loom bobbin, slightly cross-wound cotton

EXAMPLE OF PACKAGES that can be run on Autoquiller shows range it can handle.

Ball In Sweepstick Eliminates Misalignment

A new sweepstick which is said to improve the picking action of looms and to outlast many times any previous sweepstick is being made by The Heim Co., Fairfield, Conn. The Heim Unibal sweepstick is interchangeable with sweepsticks now in use.

The body member is made of resilient rubber-bonded fabric. A self-aligning spherical bearing with a single ball—hardened, lapped, polished, and bored to fit the stud—operates in a bronze ball race; not unlike a shoulder socket joint. The Unibal bearing, when built into a sweepstick, eliminates an oversize stud hole and compensates for any misalignment, the manufacturer states. Uneven pick action and resultant mending of kinks and loops in the cloth caused by elongated stud holes and increased power adjustment are said to be eliminated.

LONGER LIFE and better loom operation are claimed for this new type of sweepstick.

The sweepstick has been in use under actual operating conditions in several mills and is said to have proved its ability to outlast the conventional type of sweepstick many times over. The manufacturer states that cost is modest and, due to the longer, trouble-free life of the stick, down time and production losses are cut to an economical minimum. It is claimed that the new sweepstick will pay for itself in a very short time simply by the

UXBRIDGE "Gentle Air" fits into any picture

The Crown Manufacturing Company of Pawtucket, R. I., makers of fine wool-rayon blended fabrics is slashing 900 pounds of yarn per hour with an Uxbridge Gentle-Air. This is double previous slasher production, although only 65 pounds of steam is available.

Here is a dry box designed to be flexible. It fits into any production picture, gives improved sizing on cotton, rayon, wool or blends of all three at almost unbelievable high speeds.

As the picture above shows, the Gentle-Air dry box fits into any installation picture. Crown has developed its own unique creel, size box and front end to bring its slasher operation to peak efficiency. Other users utilize new multiple-motor drives. Some stick to the older friction clutch drives or magnetic clutch drives. It makes no difference to Gentle-Air.

From every installation comes reports of increased production, better warps at lower cost.

BACHMANN UXBRIDGE WORSTED CORP.
UXBRIDGE, MASSACHUSETTS

More warps and Better warps

extra yardage produced through uninterrupted operation.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-81.

Clamp and Shear Cuts Yarn Waste

A new clamp-and-shear mechanism for reducing waste in knitting jersey fabric having unlimited stripe and design variations has been developed by H. Brinton Co., Kensington Ave. at M St., Philadelphia 24, Pa. The unit will be standard on the Brinton STWY and SWY models.

The new device is said to reduce waste of yarn by about 9%. In addition, width of the yarn-change lap is cut from 1¼ in. to 1 in. or less.

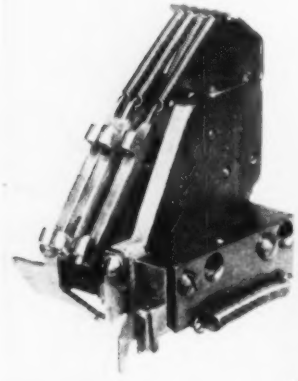
A drum with 36 positions gives flexibility and unusual accuracy to each striping finger and substantially improves the selection field for striping.

The design of the clamp and shear provides positive clamping of yarns. The device has only five pieces and only one moving part. A single chain is used to control stripe, tuck, and welt.

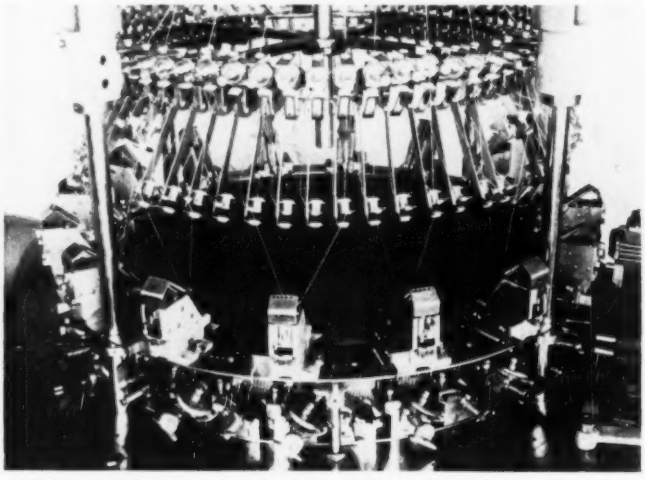
To request further information, please use the card on page C of the Reader Service dept.; refer to T-108.

Filling Marks Reduced By New-Type Loom Pinion

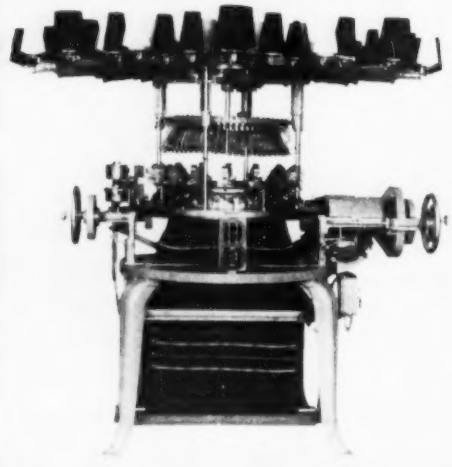
Filling marks in cloth can be greatly reduced or completely eliminated by use of a newly designed pinion for loom motors, according to the pinion



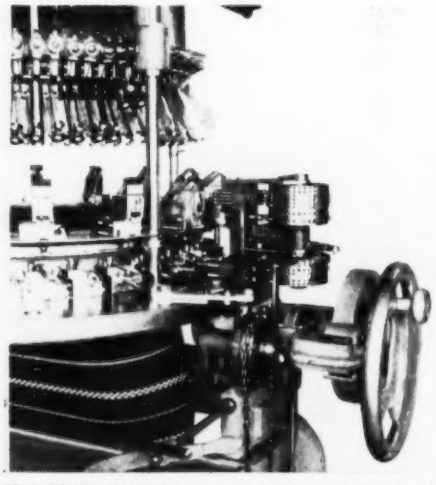
COMPACTNESS AND SIMPLICITY are features of this new clamp-and-shear mechanism for 4-color striping units.



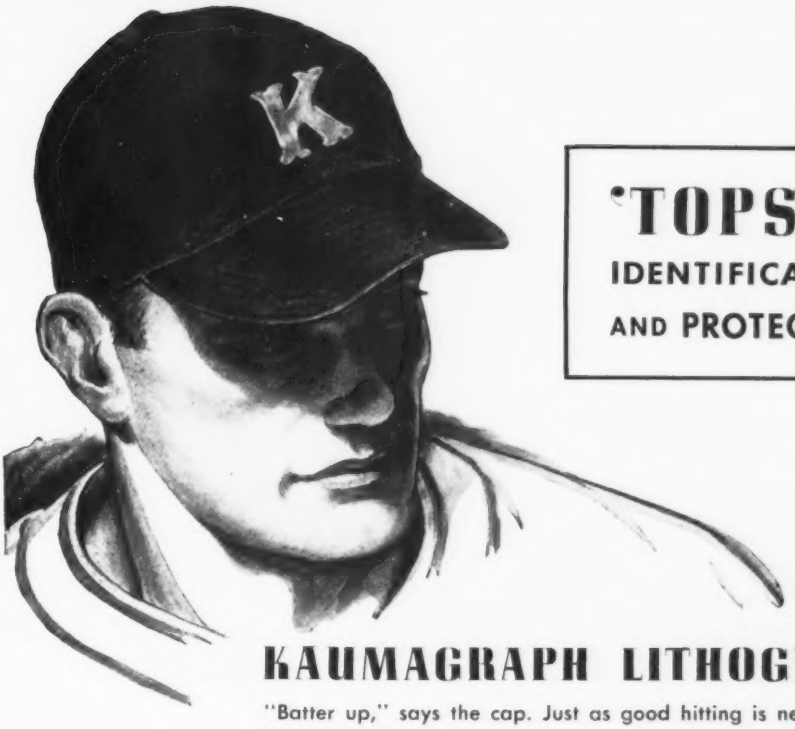
CLEAR SEPARATION of yarns entering striper fingers is made possible by design of the striping unit with clamp-and-shear mechanism.



PATTERN-DRUM MECHANISM selects striping fingers. Separate drum controls movement of tuck and welt bars.



FOUR-COLOR STRIPERS with clamp-and-shear unit are mounted on ring above cam sections.



'TOPS' FOR IDENTIFICATION AND PROTECTION

KAUMAGRAPH LITHOGRAPHY

"Batter up," says the cap. Just as good hitting is necessary on the diamond, a high sales batting average is a must for your packaging and merchandising materials in today's market. They must score stronger hits with more customers to strike out growing competition.

Kaumagraph Lithography is currently boosting a wide variety of textile products into the sales-winning league . . . adding distinctive, colorful buyer appeal to wrappings and labels . . . putting new push and sell-power into booklets, posters and broadsides . . . identifying and proclaiming product quality from factory to final consumer.

Discover how creative Kaumagraph Lithography can help you mark your textiles, spark your sales. Kaumagraph's art facilities are ready to serve you and a Kaumagraph man is ready to show you.

- Dry Transfers
- Prestomark Labels
- Embossed Seals
- Transfer Irons
- Stamping Inks
- Lithography for Box Wraps
- Labels • Displays
- Booklets and Folders

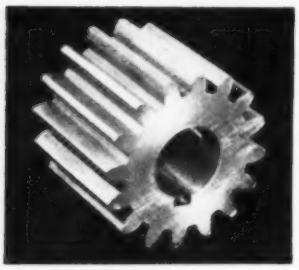
Real savings in time and money are now being made in the many mills where Kaumagraph Dry Transfer marking is being used in conjunction with some processing operations. Let's help determine the practicality of this for you.

KAUMAGRAPH

Identification Headquarters *Since 1902*

KAUMAGRAPH COMPANY, WILMINGTON 99, DELAWARE

EMPIRE STATE BLDG., NEW YORK CITY • *Representatives in Principal Textile Centers of the World*



MOST EFFECTIVE on synthetics, this new loom pinion is said to eliminate or reduce fillingwise marks.

manufacturer, Machine Design Associates, Stafford & Heard Sts., Worcester, Mass. Design of the new pinion is said to make loom operation much quieter. Longer life is said to be given to the friction or motor gear on the loom, and "working out" of teeth on this gear is claimed to be eliminated.

Mill tests of the new pinion are reported to have shown complete elimination of filling marks in some cases, and a reduction in all cases. The pinion has been used on looms weaving synthetic, cotton, and worsted fabrics, and blends of all these fibers. Most marked improvement is said to occur in 100% synthetic-fiber fabrics.

The pinion is precision-machined on a special machine built for the purpose, and can be obtained hardened or soft.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-83.

Warp Bobbins Stripped Automatically

A new warp-bobbin-stripping machine has been developed by Production Engineers Co., 306 Stuart St., Boston, Mass. The machine is designed to strip all yarn from any type warp bobbin, from tails to full wound bobbins, without cutting or damaging the bobbin.

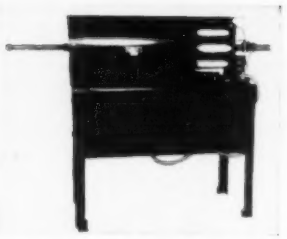
In operation, the operator drops the bobbin between two rotating plates. One end of the bobbin fits a holder block in one plate; the other end fits into a half-round cut in the rim of the other plate. Both plates are securely tied together with a central adjustable rectangular clamping shaft. This shaft drives both disks in unison to the various stations in the stripping cycle. Once the bobbin starts on its stripping cycle, it is fully controlled by the machine itself.

The bobbin is rotated to five automatic stopping stations in its cycle. Various operations take place at each station. In the first station an air jet cleans the interior of the bobbin of all threads and lint. The second station brings the yarn on the bobbin up against a bobbin-turning device. As the bobbin is carried from the second to the third station, the bobbin is rotated into sloughing knife fixed at an angle underneath, with an angular spring-loaded plow directly opposite and above. The knife and plow remove about 3 in. of yarn laterally from the neck of the bobbin, leaving only a very thin layer of yarn to be stripped from this section of the bobbin. The waste drops to the top of the platen where it is blown by air down the chute to the waste box. When the bobbin is driven to the next station, it stops just underneath the presser foot trip bar.

Between station four and five the presser foot trip bar is actuated and trips the spring-loaded presser foot, allowing it to swing into contact with the bobbin at its neck. The presser foot is concave underneath and fits the diameter of the bobbin itself. The presser foot is constructed similarly to that used on a domestic sewing machine, but instead of a needle workin between its fork, a high-speed knife rotates between the fork. This rotating knife is readily adjustable to the presser foot that bears on the bobbin, and can be adjusted so as to cut the finest yarn without cutting the bobbin. As the bobbin continues upward to its stripping and cleaning position, the presser foot slides along the bobbin, picking up the initial yarn on the bobbin until it stops in the cutting position. At this position any threads not cut by the presser foot in its picking-up operation are immediately cut by the high-speed slitting knife.

As the bobbin has now reached its stripping position, a slight dwell occurs to allow the stripping plow to spring into position underneath the bobbin or 180° from the rotating cutting knife which cuts the threads on top of the bobbin. At this time a cam-driven rammer rod with a beveled tip seats itself in the hole at the small end of the bobbin and starts to push the bobbin through the ejection tube. While the bobbin is being driven through this stripping operation, the yarn is being cut and plowed from under neath the bobbin, where it is blown by air jets down through the chute to the waste box.

When the rammer has completed its full stroke, a spring-loaded latch in the ejection tube prevents the bobbin from being drawn back into the machine by the rammer.



YARN IS CUT from warp-wound bobbins without damaging the bobbin by this new stripping machine.

The rotating knife bracket swings on a pivot, allowing the pressure foot which in turn controls the location of the knife to the bobbin, to strip the yarn from any shape warp bobbin.

A ¼-hp. thermal-cutout motor drives a gear-reduction unit and knife countershaft pulley through two V-belts. An overload safety clutch throws out automatically if overloaded, eliminating any possibility of breakage of the machine or its parts. The motor control switch is two-way to allow the motor to be reversed if necessary.

Compressed-air tubes are located in various positions on the machine so as to keep the system free from cut ends, etc.

This machine is rated at 35 bobbins per min., or 16,000 bobbins per 8 hr., regardless of whether full, strip, or tailings are put through the machine.

Over-all dimensions of the machine are 48 in. high, 20 in. wide, and 63 in. long. Weight is approximately 450 lb. The machine can be adjusted to take 6½- to 9½-in. bobbins. Delivery can be made in about eight weeks.

To request further information, please use the card on page C of the Reader-Service department; refer to T-109.

Dye-House Truck Has Partitioned Construction

A new dye-house truck of unique design is being manufactured by North American Design Associates, 507 Fifth Ave., New York, N. Y.

The new stainless-steel truck features partitions, the spacing of which is individually designed to coincide with the rake beams on the dyebecks. An advantage of the partitions is that efficiency of single-strand dyeing is increased by facilitating unloading of individual pieces from the beck simultaneously. The construction also en-

Just imagine that you're holding a glass of crystal clear spring water up to the sun. Why? That's the quickest way to describe CLEARFILM—a crystal clear sizing and finishing gum for rayons and mercerized cottons.

crystal clear as spring water

CLEARFILM is an outstanding specialty developed by National. It gelatinizes readily in hot water and can be applied at normal temperature. The result? Always a crystal clear solution . . . an equally clear film on any textile fabric . . . lustrous, often brightened colors . . . uniformly maintained shades.

Photo courtesy of:
AMERICAN VISCOSE CO.

CLEARFILM—which is just as effective but less expensive than gum arabic and gelatin—is ideal for dyeing and finishing in the same operation. And it's an excellent extender for many synthetic resin finishes. Write for a test sample.

National also produces the following *starches—and specialties with easily demonstrated superiority:* AMBERTEX a heavy bodied thickener for white discharge, rapidogen and vat color printing; FLOTEX to replace natural gums for printing; TABLE ADHESIVE for screen printing; FLOCK ADHESIVE 970 for chenille flock printing; HOOSIER PEARL CORN STARCH . . . THIN BOILING CORN STARCH . . . CHLORINATED CORN STARCH . . . and DEXTRINES.

Address: 270 Madison Ave., New York 16; Boston, Philadelphia, Atlanta, New Orleans, Indianapolis, Chicago, San Francisco, and other principal cities. *In Canada:* National Adhesives (Canada), Ltd., Toronto and Montreal. *In Holland:* National Z.L., Veendam.

National
STARCH PRODUCTS

clearfilm

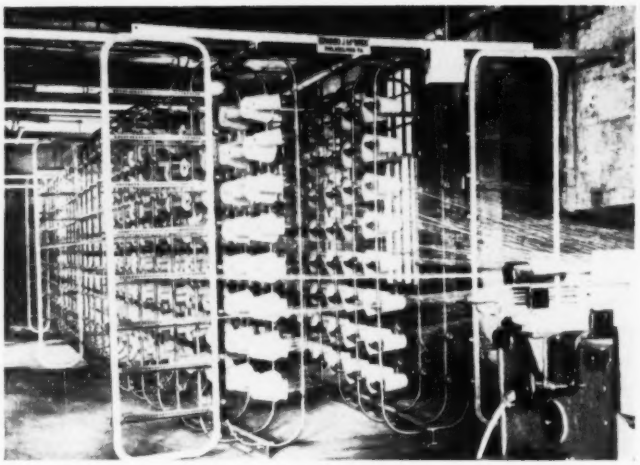
A SIZING AND FINISHING GUM FOR RAYON AND COTTON

ables faster and more even drainage of excess water while at the same time preventing tangles. Furthermore, the ends may be sewed on the truck, eliminating the need for an opening reel.

The trucks are exceptionally rigid, and are of all-welded, smoothly ground skin construction. The ends are flush, permitting the trucks to be lined up in front of the beck in such a way as to allow complete unloading.

Types and sizes of casters are optional, depending on the weight of the material being processed and the preference of the purchaser. The trucks are available for immediate delivery in reasonable quantities.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-105.



CONE HOLDERS can be mounted for either inside or outside loading.

Magazine Creel Has Versatile Design

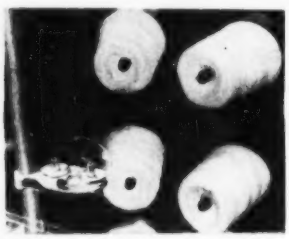
A new magazine creel, the SRM, with unique features, has been introduced by by The Edward J. McBride Co., Adams Ave. and Leiper St., Philadelphia, Pa.

A new-type patented swinging arm with ball-positioning lock combines positive locking with easy turning for quick loading. The entire arm is given a smooth finish; and even the set screws are completely recessed, eliminating all obstructions that might snag ballooning yarn. Arms are fitted with universal metal holders for varying cone tapers or spindles for parallel tubes. The use of wooden plugs is said to be eliminated.

Design is such that the same basic units can be assembled either as a silk or rayon system to provide outside loading with yarn coming down the center for draw-off over end, or as a cotton system with inside loading. The unique monorail construction which permits this flexibility also provides complete accessibility for quick, easy cleaning, empty or fully loaded.

Double post, disk-type tension units have recessed hex heads for positive adjustment without marring posts. The positive electromagnetic stop motion is equipped with two-way signal lights visible from creel or warper—to speed location of broken ends. Lights are housed in a steel channel for maximum protection.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-97.



DOUBLE-DISK TENSION device has clear-plastic shield to keep ballooning yarn from trapping.

Humidity Indicators Are Low-Priced, Dependable

RELIABLE UNITS designed for all-purpose work are these low-priced humidity indicators.

Two models of lower-priced humidity indicators have been announced by Serdex, Inc., 91 Cambridge St., Boston 14, Mass. The design, construction, and lower cost of these instruments permits broad use where the higher precision of laboratory models is not required.

The diaphragm used in all Serdex models represents a complete departure from the orthodox types of humidity elements and is said to overcome the difficulties encountered with the free edges present in the strip form.

The Certified Model hygrometer is guaranteed accurate within ±3% r.h. The lower-priced Utility Model is guaranteed accurate within ±5% r.h.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-104.

Range Shrinks Cloth With Minimum Tension

A new London-shrinking unit said to give better production and improved quality at lower cost has been developed by James Hunter Machine Co., North Adams, Mass.

The unit is said to eliminate troubles commonly encountered with previous loop-type or older-type dryers. Stretching caused by the weight of the loop and scalloped selvage is eliminated, it is claimed.

Cloth in the Hunter dryer is carried horizontally through the dryer on a special conveyor. The Hunter patented uniflow air system is utilized to insure even drying from side to side. Air is blown through the cloth on both the back and the face to prevent any chance of shadiness. Positive circulation is provided by special fans (eight per section). The air is heated by steel extended-surface heaters adequately screened to catch lint and flock.

The entire unit consists of a stainless-steel wetting-out tank equipped with stainless-steel ball-bearing idler

More economical maintenance... More efficient heating!

with the self-cleaning

TEXTILE THERMOLIER

Incorporating all the features that have made the standard THERMOLIER a leader, the new TEXTILE THERMOLIER *banishes the problem of clogging and loss of heating* capacity, and cuts cleaning to almost nothing.

TEXTILE THERMOLIER proved its superiority in this actual spinning room test. A conventional unit heater clogged solid in four days . . . its heating capacity was lost as clogging increased. Finally it had to be shut down for a prolonged cleaning period. After three weeks of operation, TEXTILE THERMOLIER showed negligible accumulation . . . it was quickly cleaned with an air hose.

Cutaway view of heating element showing unobstructed air flow passages (drawn to exact scale)

- *Free flow of air self-cleans the heating surfaces.* Lint, fly and dirt sweep clean from horizontal trailing edge.
- Maximum capacity provided at all times and annoying and destructive water hammer *eliminated because built-in pitch of tubes and internal cooling leg assure continuous drainage of condensate.*
- Safety and durability assured with leak-proof tube-to-header construction.
- Plain thermostatic trap, the simplest and least expensive kind of trap, made practical because of Thermolier's exclusive internal cooling leg. Write for the full story.

99 YEARS PIPING

GRINNELL

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rolls. The tank is used for cold-water shrinking or for the application of waterproof or resin finishes. The unit gives a positive dip and immersion, followed by a squeezing action which thoroughly impregnates the cloth, to control shrinkage accurately.

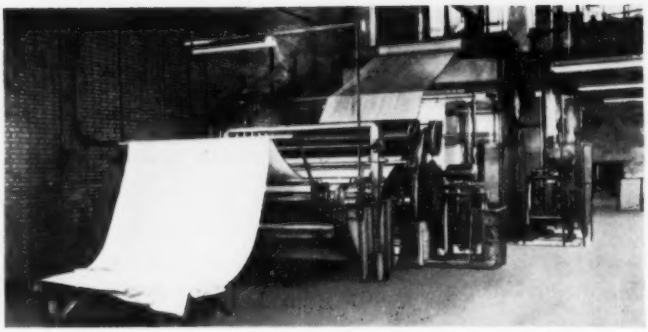
The goods are then extracted by means of heavy-duty pneumatic squeeze rolls. The pad, which can apply over 10 tons pressure, thoroughly impregnates all the fibers with any special finishing agent involved.

A variable-speed drive is used to control the speed of the entire range. Speed can be changed by pushbutton control.

Shrinkage is obtained and controlled by a variable-speed roll as the cloth enters the dryer. From 4 to 10% shrinkage can be obtained in the warp with a minimum width shrinkage at continuous speeds from 10 to 50 yd. per min.

The dryer is easily accessible for maintenance. Cloth can be delivered either at the front or back, and the entire range can be operated by one man. Temperature is controlled automatically from 160 to 300° F.

To request further information, please use the card on Page C of the Reader-Service dept.; refer to T-92.



A VARIABLE-SPEED ROLL at the entrance to the dryer controls shrinkage.

Efficient Dust Collector Is Self Cleaning

Nearly 100% filtering action and automatic cleaning are two advantages claimed for the new Aeroturn dust collector available from Whitin Machine Works, Whitinsville, Mass. The collector is manufactured by Turner & Haws Engineering Co., Inc., and sold exclusively by Whitin.

The problem of complete removal of fine dust particles without clogging the filtering medium has been solved by an automatic filter-cleaning device. The filter used is a hard wool-felt bag. Surrounding the bag is a movable blow ring whose diameter is slightly smaller than the bag diameter. The ring will flex the bag when the ring moves from one end of the bag to the other. The inner surface of the ring has a long narrow slot, and air at approximately 2-lb pressure passes through the slot from a flexible hose connected to the ring and to a blower driven by a small motor.

This relatively high-pressure air in small volume passes from the slot in the ring and through the bag. The concentrated air pressure plus the flexing action of the blow-ring movement dislodge the accumulated dust on the inner surface of the bag and cause it to drop into the hopper located beneath the bag.

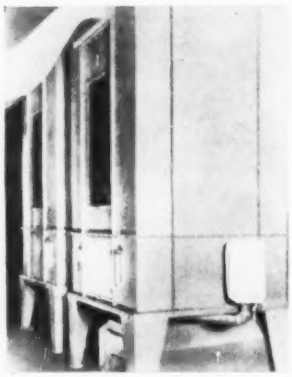
The ring is moved along the outside of the bag by a chain driven by a sprocket on the motor that drives the blower.

The bag needs to be cleaned or freed of dust accumulation only at certain intervals. Usually, the blow ring operates for about 2 min. every 15 min., but this ratio will vary in accordance with the amount of dust in the air passing through the Aeroturn. The operation of the blow ring is controlled automatically by a synchronous-clock program switch which starts and stops the motor and blower.

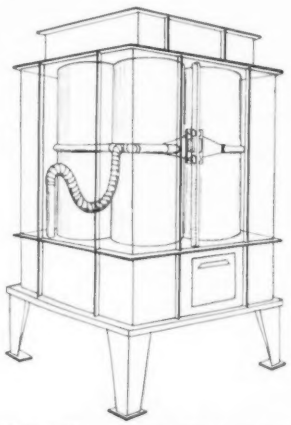
Ability of the Aeroturn dust collector to eliminate the finest dust particles is said to have been proven by tests made by the Department of Industrial Hygiene of Harvard University. The tests showed practically 100% dust elimination from the filtered air.

The dust collector is available in various sizes.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-96.



THE AEROTURN DUST COLLECTOR filtering capacity makes economical use of floor space.



BLOW RING surrounding filter bags moves up and down periodically, blows dust from inside of bags into hopper below.

British Twister Has New Spindle Foot Brake

A new ring twister capable of handling natural and synthetic-fiber yarns has been developed by Tweedales & Smalley Ltd., Castleton, Lancashire, England.

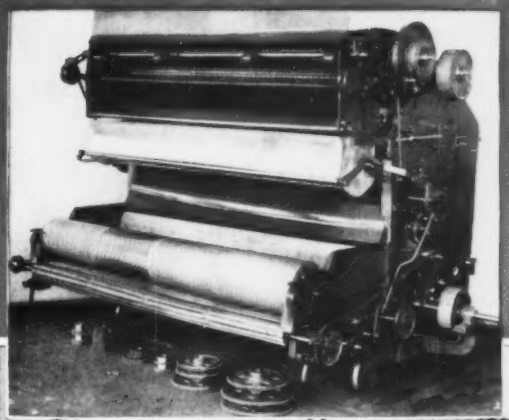
Height of the roller arrangement is 39 in., a height which is conveniently below eye level yet which does not cause the discomfort of stooping. The reduction of the height of the rollers has made it possible to reduce substantially the height of the creel, even when large packages are being used.

The frame is fitted with two lines of bottom rollers and one line of loose top rollers. Sufficient space has been left between the two lines of bottom rollers for the operator to insert her fingers when threading or piecing.

A new feature of the machine is the foot-operated brake on each spindle. The actual braking mechanism is con-

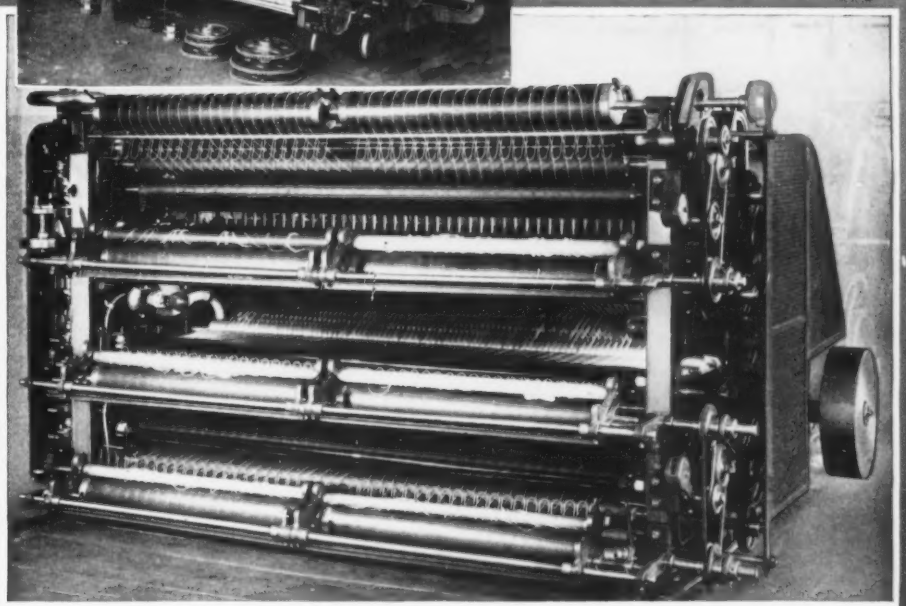
Duesberg-Bosson

WOOL PREPARING MACHINERY



AUTOMATIC CARD FEEDER
With sensitive weighing device, which prevents overweighing of stock in scale pans.

TAPE CONDENSER
Single apron type. Extremely high efficiency; suitable for condensing all types of fibre.



We make WOOLEN CARDS with two, three and four cylinders, for Fine, Medium and Carpet Wools• Patented PERALTA Machine•OILING DEVICE • MIXING PICKER (Fearnaught Type) • PICKER FEEDERS • AUTOMATIC CARD FEEDERS • TAPE CONDENSERS • INTERMEDIATE CENTER DRAW BROAD BAND FEED.

DB

Duesberg-Bosson of America, Inc.

FITCHBURG, MASSACHUSETTS

tained within the spindle wharve and consists of an expanding metal ring split radially at one point.

The build motion has been improved. In order to give a uniform rise and fall, a balanced ring rail has been provided, the movement of which is derived entirely from gear wheels in place of former cams and lifting levers. An advantage claimed for this method is that the risk of producing irregularly shaped bobbins due to cam dwell, etc., is almost entirely eliminated. The mechanism is quickly adjustable for slight variations in the lift when any changes are necessary in the counts of yarns being doubled, the gear drive permitting quick reversal of the ring rails.

Roller-bearing spindles of special design are fitted in the machine, a feature designed to achieve a considerable saving in power and in the cost of maintenance. Rising and falling lappets are fitted to give constant balloon and reduce excessive yarn tension.

The standard frame is suitable for fine, medium, or coarse yarns, and is designed for ring diameters up to 5½ in., gage up to 7 in., and for up to 8-in. lift bobbins. The machine may be arranged for either dry doubling (twisting) or with troughs for English wet-system doubling.

To request further information, please use the card on page C of the Reader Service dept.; refer to T-100.

Spreader Handles Tricot Fabrics

An electrically operated cloth spreader to lay out tricot fabrics without stretch or tension is now in production by Cutting Room Appliances Corp., 45 W. 25th St., New York 10, N. Y.

The machine is designed to handle doubled tricot materials and to eliminate the difficulties encountered while laying up the goods. The unit is push-button controlled and requires no manual handling during its operation. It runs on a geared track along one side of the cutting table.

The new machine rides up and down the table, laying the goods quickly and accurately, automatically reversing at the ends of each layer. The unit is halted automatically at the end of the piece of goods or when there is a break in the cloth. The machine can also be stopped whenever necessary by the operator through the use of a "stop control," a wire that runs under the entire length of the table.

The material is fed through rollers located in the center of the machine to assure even tension and to prevent stretch in the fabric. The ends of each layer are folded over automatically at the same point on the table, so that each succeeding layer is placed exactly over the one beneath. A divider, or "spreader," is placed between the doubled folds to insure the required straight edge along the entire length of the lay. A register automatically counts each ply as it is spread.

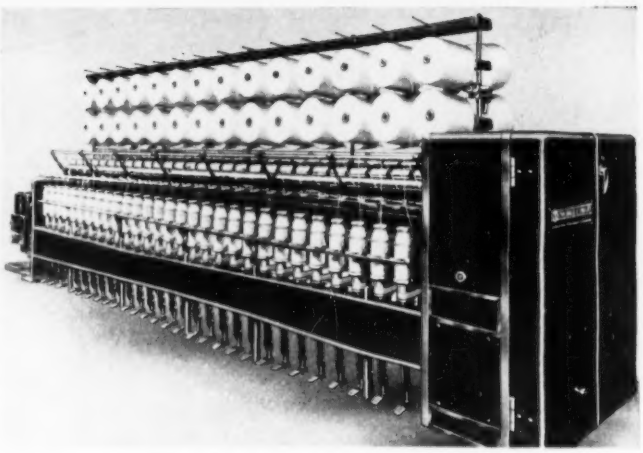
Machines are made up to a maximum width of 72 in., but "stock" models are in the 60-in. width to handle the 112- and 120-in. single widths which are doubled over to 56 and 60 in. respectively. However, each machine in each width is capable of handling all widths of material up to its maximum.

An overhead trolley or feedrail system supplies the electrical power necessary for the electric cloth spreader which can operate on a table of any length. The machine goes at the rate of 125 to 175 fpm., but may be adjusted to faster or slower speeds, as required.

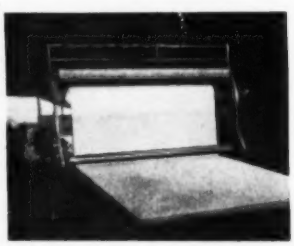
The machine is also adaptable without adjustment to the laying up of tubular-knit fabrics, and can handle two pieces of goods, with a maximum width of 29 in. on each piece, at the same time.

Availability is about four weeks.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-88.

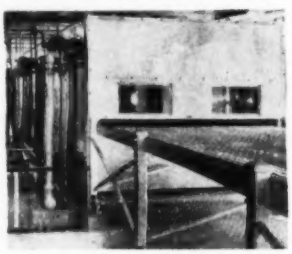


ROLLERS on this new twister are only 39-in. from the floor.



STRAIGHT EDGES in laying tricot fabric are insured by a special spreader.

Drying and Curing Range Features High Speed



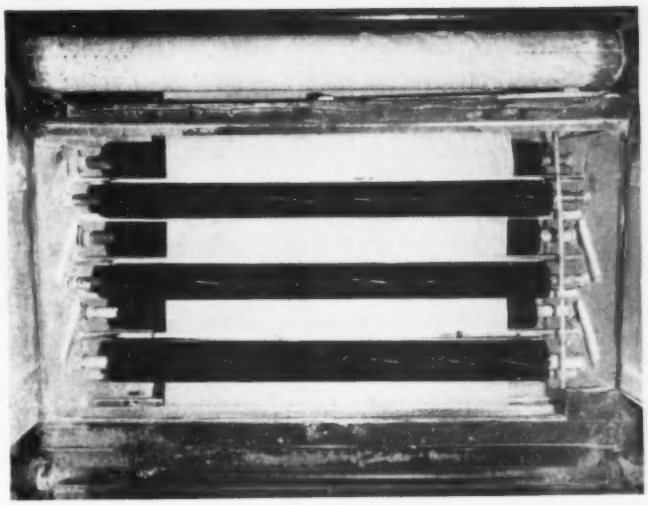
HIGH-VELOCITY FANS and air jets in this new drying and curing range impinge air at 2,000 ft. per min. against both sides of the fabric.

A new gas infrared and high-air-velocity system for drying and curing latex backing on carpets has been developed by Process Heating Co., Inc., 46 Herkimer Place, Brooklyn 16, N. Y.

The system incorporates gas infrared generators as the source of convected and radiant heat. Large-volume fans with high-velocity air jets impinge air at velocities upwards of 2,000 ft. per min. against the top and bottom of the carpets.

A stainless-steel balanced spiral conveyor, 7 ft. wide by 100 ft. long and

(Continued on page 250)



3 IMPORTANT COST SAVINGS

WITH LONG-SERVICE FULLERGRIPT BRUSHES

1 **OVER 7 YEARS SERVICE . . .** instead of 6 to 8 months

2 **NO "SPARES" NEEDED** (saving several hundred dollars investment)

3 **REPLACEMENT WITHOUT DISMANTLING MACHINE**

Plus ***EVEN DISTRIBUTION OF STARCH OVER THE RUBBERIZED CLOTH SURFACE***

On June 10, 1941 six Fullergript brushes were installed in a starch dusting machine at The Acme Backing Company of Brooklyn, N. Y. The previous type of brush had a life of six to eight months, after which the entire brushes had been removed from the machine for rebristling. Meanwhile, the machine would be kept in operation with a spare set of brushes costing three to four hundred dollars.

The Fullergript brushes were examined on June 5, 1949. After seven years' service (the machine was idle one year during the war) the Fullergript brushes still had half their trim left. At least two years of additional operation were expected. The long life resulted from Fullergript metal-back-strip construction.

Since Fullergript brush strips are mounted on metal-flanged arbors, only the strips are replaced. The arbors remain in their journals. No time is wasted dismantling. And the replacement is so rapid that no "stand by" brushes are needed — and again costs are reduced.

Another advantage of Fullergript brushes on starch dusting comes from improved control of product quality. The Fullergript strips are mounted in a 180° semi-spiral, for a brushing action that distributes starch evenly.

Whether you produce rubberized fabric, or any other textile product there are Fullergript brushes to improve your efficiency. For profitable ideas about brushing, simply write to . . .

FULLERGRIPT The **FULLER BRUSH CO.**

INDUSTRIAL DIVISION, 3594 MAIN ST. HARTFORD 2, CONN.

THIS IS NO. 77 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

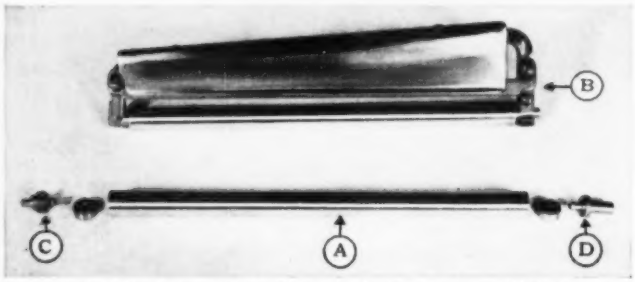


Fig. 1. New roller bail for Pineapple Coning attachment (below) with present bail holder (above).

IMPROVED ROLLER BAIL for No. 50 Pineapple Coner

The Pineapple Coning attachment which has proved itself highly satisfactory for the coning of filament yarn on the No. 50 Winder has recently been improved upon by the development of a new roller bail which revolves on shielded ball bearings.

This new roller bail reduces maintenance because the shielded ball bearings require neither oiling nor readjustment after the initial installation has been completed. It improves the quality of winding because it revolves more freely upon these bearings.

The bail (A in Fig. 1) is slightly longer than the one now in use, but can be used with the type of bail holder (50-2922-10P3X—B in Fig. 1) on existing machines. It is supplied with ball bearings and studs (C) and (D) already assembled. Instruction sheets have been prepared to facilitate making the change which can easily be made by the fixer or mechanic in charge of the winding area.

HOW TO REPLACE LOCKING POINTS on No. 50 Winder

The locking points on the No. 50 Winder (Fig. 2) are made in such a way that they can be turned around to present a new locking surface when one surface has become worn.

Fig. 2—Locking points on No. 50 Winder

The locking pin on the brake lever has *four* locking surfaces. It is attached to the brake lever by a nut and washer. When one surface has become worn, the pin can be turned to present a new surface simply by removing the nut and washer and turning the pin 90 degrees.

The locking plate on the dogging segment has *two* locking surfaces, one at either end. It is riveted to the segment, so that when one of the surfaces has become worn, the rivet must be removed in order to reverse the plate and present a new surface.

This operation requires a certain amount of care because if done incorrectly the dogging segment might be broken. The hole in the segment (Fig. 3) is counter-sunk; so if the rivet head is merely ground off and an attempt made to force the rivet out of the segment, the stock of the rivet which is swedged into the head of the segment will cause it to break at its weakest point.

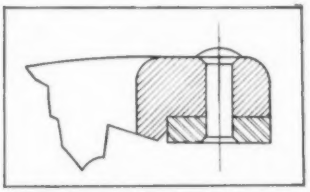


Fig. 3—Cross-section of dogging segment shows how locking plate is attached by rivet in countersunk hole.

The correct method of releasing the locking plate is to grind off the rivet head and then drill down into the rivet approximately ¼ in. with a 3 32 in. drill. This releases the pressure at the head of the rivet where it is peened into the countersunk portion of the segment. The rivet can then be removed without any undue strain on the segment.

When re-riveting the plate to the dogging segment, the plate should be held flat on a mandrel to prevent breakage.

*Reg. U.S. Pat. Off.
23.9.2

September 1949

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

UNIVERSAL DIVISION

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

Kinks AND SHORT-CUTS

Best Kink Award For July

Each month TEXTILE WORLD awards $25 to the submitter of the kink which is judged by a panel of over 200 practical mill as the best for that particular month. A new batch of kinks appears each month, and a new group of readers acts as judges each month. If you are asked to judge one of these days, be sure to help select the best kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the kink appeared.

Two entries in July tied for top honors. They both had the same number of votes for first place. Each winner is being sent a $25 check with the compliments of TEXTILE WORLD. Winners are:

William Shaw, Providence, R. I., for his kink, "Bramwell Feed Box Feeds under Pressure."

Ernest R. Spuehler, Montoursville, Pa., for his kink, "Counting Filaments."

Knock-Off Electrodes Reduce Seconds and Breaks

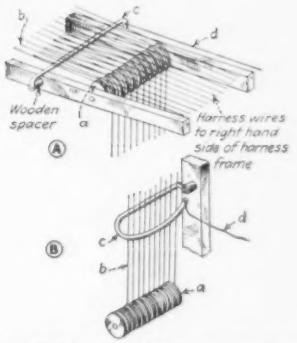
The cost of broken loom parts and defective cloth has been reduced in our weave room by the use of knock-off electrodes to stop the loom if a harness wire breaks.

As shown in the sketches, we use two electrodes on each loom. The one in *A* is used to stop the loom if a horizontal wire breaks. The one in *B* stops the loom if a vertical wire breaks.

The horizontal electrode is placed across the loom arches at some point between the harness jacks and the first harness-wire sheaves, so that all of the horizontal wires will work directly over it. The electrode is bolted to the arches. It is insulated by wooden or leather spacers and is connected with the warp stop motion by a wire run along the loom arches and framework. The electrode is placed directly under the harness wires so that a broken wire will fall on it and stop the loom.

The vertical electrode, shown in *B*, is fastened to the loom frame at the end at point between the bottom harness jacks and the harness-wire sheaves. It is bent around the harness wires, without touching them. When a vertical wire breaks, it falls against the electrode and stops the loom through the warp stop motion.

Since we have been using these electrodes, we have had less bad cloth



KNOCK-OFF ELECTRODES, placed on a loom as shown here and connected with the warp stop motion, reduce the amount of bad cloth and broken parts resulting from broken harness wires. The electrode in A is used for horizontal wires and the one in B for vertical wires.

The parts as labeled are: a, harness sheaves; b, wires; c, electrodes; d, electrical wire to stop motion.

Below is announcement of a greater KINK CONTEST you can enter NOW. Kinks being published in this issue will be judged as outlined in the rules below.

$200 for Best Kink in 1949
$25 for Best Kink Each Month
In Addition to Space Payment on Acceptance

You undoubtedly know of many kinks and short cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your kink may win the $200 check for the best kink of the year or the $25 check for the best kink of the month, maybe both!

Send in your kink now. There is always a contest going on. The more good kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the kinks in this and other issues. You will get ideas you can use as well as inspiration for kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published kink will be judged impartially by other mill men. In case of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $200 prize contest for the year. Monthly contest confined to kinks published that month, yearly to those published in calendar year 1949.
3. All kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred kinks in each issue. Their votes will select the best kink, and their decision will be final.

Send kinks to whichever address you prefer:

TECHNICAL EDITOR, TEXTILE WORLD
330 W. 42nd St., New York 18, N. Y.

ASSOCIATE EDITOR, TEXTILE WORLD
P. O. Box 1641, Columbus, Ga.

NEW ENGLAND EDITOR, TEXTILE WORLD
P. O Box 305, Salem, Mass.

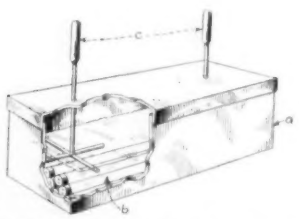
resulting from broken harness wires and fewer broken harness frames, jacks, and chain cylinders. *(K-1114)* William G. Casey, Hanover, Ill.

Break Fluorescent Tubes Under Water for Safety

It's not safe to throw fluorescent tubes on the trash pile. The powder used in some of the tubes contains a small amount of a beryllium compound, and medical science doesn't know much about how harmful this chemical may be to some individuals.

A safe way to break up the tubes is to do it under water. A device for this purpose is shown in the sketch. Box *a*, made of wood or metal, holds enough water to cover fluorescent tubes *b* placed in the box. Crushers *c* are used to break up the tubes. The operator only lifts *c* and rams it back down on the tubes to break them. The water takes care of the berryllium dust.

If this or another method that protects the operator from the powder and glass is not used, the operator by all means should wear goggles, respirator, and heavy gloves. *(K-1186)* General Electric Co.



***FLUORESCENT LIGHT TUBES** should be destroyed in such a way as to keep the powder in the tube from touching anyone. A good place to break them is under water, as in the metal box shown here.*

Smooth Reed Wires To Stop Washboarding

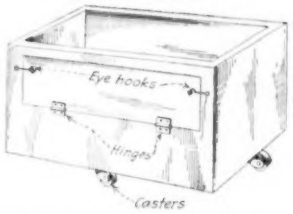
About 90% of "washboard" shuttles result from slightly imperfect reeds—a defect found especially in new reeds. Some of the wires in these reeds stick out slightly farther than adjacent wires, and their scraping action on the side of the shuttle causes the washboard effect.

To prove the point, if you have a loom that is developing a washboard shuttle, remove the warp and reed and switch them to a loom with a smooth shuttle. The smooth shuttle will soon develop a washboard. At the same time, take the warp and reed from the smooth-shuttle loom and switch them to the loom that had the washboard shuttle. Smooth the washboard and start weaving. The shuttle will remain smooth because it is running against a smooth reed.

While misalignment and the other causes listed in TEXTILE WORLD, April, '49, page 236, are sometimes causes, the reed is nearly always the culprit.

To cure the problem of washboard shuttles, especially on a new reed, glue a piece of crocus cloth to the back of the shuttle and run it for about 4 hr. only. You'll have no more washboard shuttles from that reed. *(K-1185)*

Drop Panel on Box Is Help in Emptying



***A DROP PANEL** in the side of a big box used for storing or hauling bobbins, spools, roving, etc. is a help to the workers who must empty the box. The panel is especially helpful if women must take the contents out of the box. The panel can be made by cutting out about half of one side of the box, as shown here. Fasten it back to the box with two hinges that permit it to be swung down. An eye and eye hook at each end of the panel will hold it in place when the box is full. (K-1192) Wm. Shaw, Providence, R. I.*

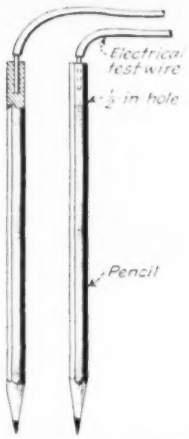
Lead-Pencil Contactors Test Electrical Current

Good contactors for electrical testing can be made from ordinary lead writing pencils. The lead is a good electrical conductor, and the wooden sheath is an excellent insulator.

To connect the test wire to the conductor, drill out the lead at one end of the pencil to a depth of about ½ in. Strip the insulation from one end of the wire, and insert the naked end of wire into the drilled hole. Seal the wire in place by filling the hole with a paste made of powdered graphite and gasoline or cleaning solvent. As soon as the gasoline dries, apply a coat of glue to the end of the pencil and filled-in hole. The glue will help hold the wire in place.

Sharpen the other end of the lead pencil and use it for contacting electrical connections.

Two contactors will be needed; so make another one in the same manner as the first.



***CONTACTORS** for many electrical-testing purposes can be made from ordinary lead pencils. Drill a hole in one end of the pencil, and fasten a naked end of the test wire in the hole. Sharpen the other end of the pencil. The lead conducts current to the wire, and the wood of the pencil insulates it. You'll need two pencils rigged up in this manner.*

If the two contactors have to be used at a set distance apart, as in testing commutator segments, a fiber block can be used as a holder. Drill holes through the block at the required distance apart, and insert the pencils. *(K-1193)* W. E. Warner, Essex, England.

Picker-Rod Bumpers Made on Hand Winder

We've found that handmade bumpers for picker rods, picker sticks, and shuttle checks are well worth the time and expense required to make them. They absorb shock unusually well and last quite a long time. They also cause less rebounding of the shuttle, and binders therefore require less tension to box the shuttle properly.

The materials used in making the bumpers include heavy paper, worsted header cloth, a small amount of strong yarn, and a leather covering.

A cloth-winding device is needed for manipulating the materials. The winder we use is shown in the accompanying sketch.

The frame is made by bending a 13-in. length of ¾x¼-in. iron strip as shown. The lower side of the frame should be 5 in. long and each end 4 in. long. Near each end, drill a hole for receiving an old shuttle spindle. The

What wool oil should I use?

This new Houghton folder may help you decide . . . . .

Here in a few pages are data on oils for woolens and worsteds, with description of chemical and physical factors important in the make-up of a good stock lubricant. You are told why oils are used, what types of oils, and a description of Houghton products offered for this purpose. Our Lanolubrics and Sulfols have long been a standard in the industry. For a free copy of this helpful folder, write:

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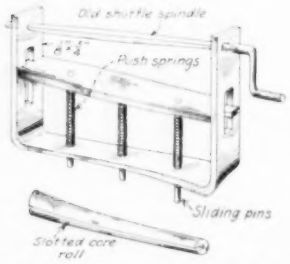


***PICKER-ROD BUMPERS** can be made by hand with this homemade winding frame. Build up a good shock-absorbent bumper by winding layers of (1) paper, (2) worsted header cloth, and (3) yarn. Then cover it with gill-box apron leather.*

hole at the right side of the frame, as shown in the sketch, will have to be large enough to permit the middle portion of the spindle to be slipped through it. The other hole, on the left side as shown in the sketch, need be only large enough for the end of the spindle.

Make a handle for the spindle, and insert the spindle in the holes as shown.

Now get an old bumper rod, or a wooden roll of the same diameter, and cut off a piece 4¾ in. long. Cut a slot down one side of this core roll so that it can be slipped over the spindle mounted in the frame.

With the core roll over the spindle, mark each side of the frame at the lower edge of the core roll. Now cut a slot in each frame side about ⅜ in. wide and extending for about 2 in. down the center of the frame side from the mark. These slots will serve as guide slots for the spring-pressure bar during winding.

The spring-pressure bar is made from ¾x¼-in. flat stock, as the frame was. Cut it about 5½ or 6 in. long. Cut away the sides at each end, leaving a guide tongue at each end to work in the ¾-in. slots.

With the pressure-bar tongues in the slots, mark three points on the under side of the bar and three corresponding points on the bottom side of the frame. Drill holes at these six points, cutting the three in the frame side slightly larger (⅛ in. larger should be all right) than the three in the bar. Thread the holes in the bar.

Now get three smooth rods about 4 or 5 in. long, and thread one end of each so that it can be screwed into a threaded hole in the bar. Stick a rod through a hole in the bottom frame side, thread it through a push spring, and screw it into one of the threaded holes in the pressure bar. Do this with all three rods.

That's all there is to the frame.

Here's how we use it:

We wind two or three turns of heavy paper around the core roll, with the spring-pressure bar bearing against the paper to keep it tight on the roll. Then we stop winding on the paper and start winding on the worsted cloth. We keep winding until we have a thickness of about 1¼ in. Then we stop winding on the cloth and put on a few turns of thread to keep the cloth from unrolling.

Now we slide out the spindle that served as an axle and remove the roll from the frame. We put a leather cover over the built-up roll. (Gill-box apron leather makes a good cover.)

Last, we push the core roll out from the center of the built-up roll. The heavy paper holds the inside of the roll in shape, preventing the cloth from collapsing.

The bumper is ready for use. *(K-1191)* Wallace C. Gray, Lincoln, Me.

Piece of Quill Paper Is Woven into Cloth

***THIS DEFECT** was made by a small piece of paper tearing off a paper quill and weaving into cloth. Paper is often peeled off a quill when the quill is not placed properly on the shuttle spindle. Operators should be careful to push the quill all the way down on the spindle before the spindle is lowered into running position. Even the best paper may be scratched if the quill is lowered against the earclips when the spindle is snapped into position. (K-1195)*

Micrometer Depth Gage Gives Card Wire Length

An accurate method of measuring wear and variations in the length of card-clothing wire is the use of a standard micrometer depth gage. The exact height of wire at any point may be determined by placing the base of

***CARD-FLAT WIRE** can be accurately gaged for depth with this standard depth gage. Wire depth can be used as an accurate check on frequency and quality of grinding.*

the micrometer on the wire and screwing the blade downward between the rows of wire (by turning the knurled ratchet screw) until the blade contacts the clothing foundation. The length of wire can be read directly on the micrometer scale in thousandths or ten thousandths of an inch.

This gage is particularly useful in detecting variations in the length of card-flat wire. The usual method is to remove the flats from the card and put them on a flat tester attached to the flat grinder. This micrometer will show whether the wear or variation is sufficient to require grinding. If the flats do not need grinding, the time required to take them off the card and put them back on is saved.

It will be found that there are large variations in the length of card wire on many cards measured. These variations are of two kinds: (1) flat-to-flat variation, where the length of wire on the same set of flats will vary; and (2) end-to-end variation, where the length of wire on different ends of the same flat will vary.

Besides its use to indicate when the flats need grinding on the flat grinder, the gage is also useful in checking on wrong grinding methods, faults in the grinding-roll settings or cradle attachments, and too tight tension of the drum-grinder band. It also enables the grinder to select and mark high flats for setting. *(K-1176)*

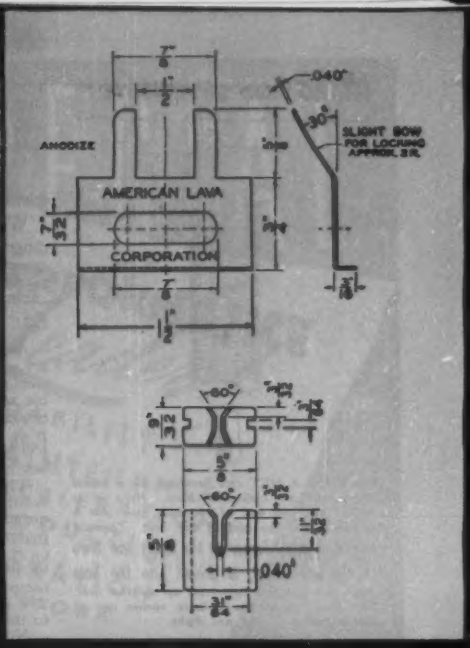
Tapered Plug in Bolt Locks Nut to Bolt

The usual locking arrangement where two nuts are run up on the same bolt often cannot be used because of insufficient bolt length. Also, a bolt that fits in a housing or other fixed hole sometimes needs locking.

Here is one method of doing the job.

Drill a small hole—¼ in. in diameter, say—about ½ in. into the end of the bolt. Then make a hacksaw slot across the end of the bolt, sawing lengthwise down the center of the hole to the depth of the hole.

Now make a metal plug from key steel equal in length (½ in.) to the hole in the bolt. The diameter of the plug should be 0.003 in. larger at one



NEW ALSIMAG

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WINDER AND REDRAW GUIDES

SAVE 95% IN ACTUAL MILL TESTS!

These AlSiMag guides have been on actual test in several mills for many months. No guide has yet shown the slightest sign of wear. The longest test is now in its sixteenth month, and still no sign of wear. These guides are running on fine denier nylon. The guides formerly used had to be replaced every two weeks. The *AlSiMag guides have already given thirty times as much service.* On the basis of cost per pound of yarn processed, these AlSiMag guides show better than a 95% saving over former guide costs.

The new AlSiMag guide is offered as a guide alone or as a guide with holder. The holder is anodized aluminum. It is easily mounted on the frames of Monarch, Sipp-Eastwood or Atwood Winder, Spinner and Redraw machines. Oblong screw slot permits ready adjustment and positioning.

The AlSiMag guide slips into curved fingers of the holder. These fingers are curved or bowed slightly to form a spring tension on the slots on the outer sides of the inserted guides. The guide may be pulled out for cleaning and slipped back into position easily, and the holder may also be removed easily for cleaning.

The AlSiMag guide is small, compact, economical. It is priced only slightly above the lowest priced guide on the market, yet it *gives many times the service. These guides are hard, homogeneous,* dimensionally accurate. They are furnished in either high polish or satin finish. The excellent wear qualities of these AlSiMag guides are well known and well proven in the Textile industry.

The AlSiMag guide is furnished in AlSiMag 192, a non-conductor of electricity; or in AlSiMag 193, a conductor of electricity, for dissipating static. Otherwise these two materials are identical in all physical characteristics.

Samples of the new winder and redraw guide and holder are available on request.

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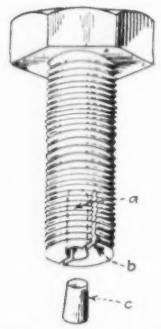
Kinks AND SHORT-CUTS



LOCKING A NUT can be done by a metal plug used as indicated here. Hole a is drilled into the end of the bolt, and slot b is cut across the end of the bolt. Tapered plug c, slightly larger at the lower end than at the upper end, is driven into the hole after the nut has been run up on the bolt. The plug causes the bolt to spring out at slot b and hold the nut tight.

end than the diameter of the hole (¼ in. plus 0.003 in.). The plug should taper off so that the other end is of the same diameter as the hole.

To use the plug to lock a nut, run the nut on the bolt and insert the plug into the hole in the end of the bolt. When the nut has been tightened, tap the plug up tight in the end of the bolt. The plug, slightly larger at the outside end than at the inside end, will cause the slotted bolt to flare slightly at the end and lock the threads.

The plug is so slightly oversize that it will not make the nut hard to remove.

Another way to lock nuts or bolts is, of course, to apply an adhesive paste to the threads before the male and female threads are placed into contact. Paint will usually lock the threads satisfactorily if the threads are not subject to heat.

Another good paste to use can be made with fine filings and gasoline or cleaning solvent. The liquid dries out and leaves the filings imbedded between the male and female threads.

When this method is used, it is advisable to make the paste from filings of the same material as the female threads—copper, aluminum, cast iron, etc. *(K-1187)* W. E. Warner, Essex, England

Unrolling Reeled Wire Is Easy With This Rack

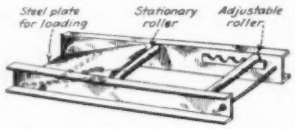
It is surprising how much trouble some people go to to pay out a required amount of coiled or reeled wire or cable. Usually, they come up with a tangled mess that is bad on everyone's temper. Besides a tangled or kinky wire, there is also a likelihood of incorrect measurement and the possibility of skinned knuckles.

We devised a rack-and-roller arrangement that has met with instant approval, since it serves both for the unreeling and reeling of wire, rope, cable, hose, and other similar material.

As shown in the sketch, a stationary roller is fixed in place next to the steel-plate loading ramp, and a movable roller is placed in slots to accommodate the size of reel to be rolled. Both rollers are equipped with ball bearings for smooth operation.

The warehouse floor is permanently marked with the most frequently used lengths of rope-form material. A reel of the material can be rolled out of a stock bin, up the ramp of the rack, and onto the rollers. The end of the material is pulled out to the proper mark on the floor.

No dimensions are indicated on the diagram, since anyone who makes a similar rack will have to build a unit in keeping with his needs. We use a rack 5 ft. long, 2 ft. wide, and 8 in. high. *(K-1199)* Paul C. Ziemke, Oak Ridge, Tenn.

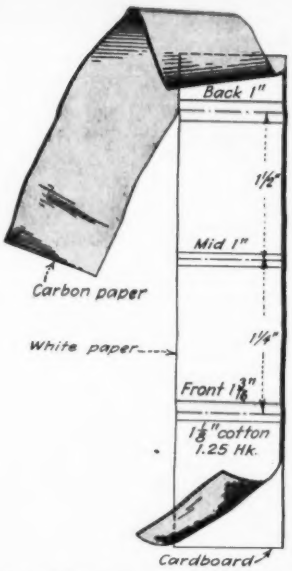


WIRE, cable, rope, hose, etc. can be easily paid off a shipping reel if a roller rack similar to this one is used. Roll the shipping reel of material up the rack-loading ramp and onto the rollers. Loosen the end of the material and pull it. The reel will roll on the rollers and unwind the strand that is being pulled. Marks on the floor make accurate the measuring of the length paid out.

Carbon Paper Marks Draft-Roll Settings

Measuring the settings of drafting rolls with a rule usually nets considerable variation when the same settings are checked by different men. In order to obtain accurate measurements, we use carbon paper to mark the actual bites between rolls.

At first, the strip of carbon paper was laid directly on the steel rolls with the carbon side face up. A strip of white paper was then placed on this carbon paper. The top rolls were put in position and lightly tapped by hand. Clear marks were made by the flutes on the under side of the white paper in contact with the carbon paper.



ROLL SETTINGS can be quickly and accurately measured with the carbon paper, white paper, and cardboard shown here. Place the carbon paper across all of the bottom rolls in the frame, and put the top rolls in the stands on top of the cardboard. The bottom-roll flutes that are up in nip position will cause the carbon to mark the white paper.

However, it was found that often there was a slight sag in the paper between sets of rolls and the readings were not accurate.

To overcome this fault, we clip the carbon paper and the white paper to a thin, fairly stiff piece of cardboard. The cardboard prevents sag between rolls, makes the paper easier to handle, and prevents many errors in measurement.

Measurements are made with the rule from center to center of the impressed flute lines. These readings should be marked plainly on the paper strip, along with the staple length of the cotton, the diameter of the rolls, and the hank or yarn number. *(K-1178)*

Steel Stand Hooks Have Hardened Ends

I have a stand hook for cleaning choked spinning rolls that's a little different from the kind that are used in most mills.

As you know, the standard hook is made of brass, and there is only one hook at the end. Mine is made from a length of 3/16-in. steel rod and has two hooks at the end.

I use about 14 in. of the rod to make a hook. I bend it in the middle

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INDUSTRIAL SEWING MACHINES

***A STEEL STAND HOOK** with two hooked ends can be made from a 14-in. length of 3/16-in. steel rod. The rod is bent and ground as shown here, and the hooked ends are hardened in graphite.*

and bring the ends together, and then bend out 1 in. at each end in opposite directions, as shown in the sketch. Then I grind off these 1-in. bends to taper them off to sharp points. Each hook is hardened in graphite to make it more durable.

Spinners and other people who have used them say they like them very much. *(K-1198) Joe B. Guthrie, Hickory, N. C.*

Graphs That Show Costs Are Useful to Knitters

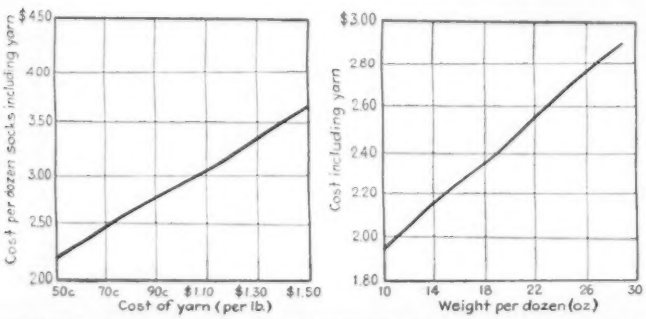
When knit goods must be made to sell at a certain price, deciding on the weight of the finished goods or buying the proper yarn so that a profit can be realized may be difficult. Graphs similar to those shown here, which relate cost of yarn to cost of fabric and weight of fabric to cost of fabric, may help to make a quick decision. Such graphs save tedious calculations.

Take the example of men's socks. If the costing weight is 23¼ oz. and the manufacturing and finishing costs are known, a graph similar to A can be made up. The base line is used to represent the cost of yarn. It ranges from 50¢ to $1.50 per lb. The vertical line represents the total cost (including yarn) of the finished socks.

Suppose that the fixed costs of winding, knitting, looping, mending, dyeing, finishing, pairing, and overhead amount to $1.45 per doz. The diagonal line would be drawn so that it would reflect a reasonable margin of profit, or perhaps a minimum margin.

By use of the graph, the manufacturer would be able to tell at a glance if a prospective order could be booked or a lot of yarn could be bought profitably.

Graph *B* relates the weight per dozen socks to the total cost of yarn and manufacturing. *(K-1194) H. Wignall, Leicester, England*



***KNITTERS** responsible for booking orders or buying yarn can use graphs similar to these to advantage. Graph A relates the cost of yarn to total cost per dozen socks. Graph B relates weight per dozen to total yarn and manufacturing costs.*

Card Cylinder Screens Cleaned With Sliver

Remove the cylinder screens of any card that has been running a few months, and you will find that the surface of the screen is gummed up and has collected considerable dust and other foreign matter.

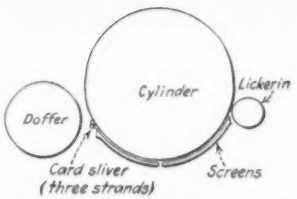
The collection is caused by oil. When the card is ready to be ground, the card grinder oils the traverse grinders. These grinders run so fast that oil is slung over the wire of the doffer and cylinder, and the cylinder in turn slings it onto the screens.

When the card is put back in production, short fibers stick to the oil on the screen and then collect foreign matter. If there is enough oil present after a few grindings, the fibers build up until they touch the cylinder and cause blotches in the web.

A good way to keep dirt and oil off the screens is as follows:

First, remove the screens when the card is set during a scheduled setting period, and clean them with a good cleaning solvent. (A good cleaning agent can be made of 50% water and 50% kerosene.) After the cleaning, dry the screen well and rub it down with graphite.

Second, keep oil off the screens by



***CARD SCREENS** can be kept clean and free of dirty accumulations of fibers by this cleaning method. Get the screens clean first; then use this kink after each grinding. Place three strands of card sliver on the cylinder and work them back and forth over the screens.*

cleaning them after each grinding as indicated in the sketch. To clean them in this way, back the doffer well away from the cylinder, and lay three strands of card sliver across the cylinder. Make a mark with chalk on the cylinder head at the sliver strands.

Now turn the cylinder forward by hand, allowing it to take the sliver strands into the screen. Watch for the mark on the cylinder head to appear at the lickerin. When it appears, stop the cylinder and turn it backward until the strands come up at the front again.

Repeat these forward and reverse turnings at least six times (twelve trips of the sliver strands). Then remove the strands and, if necessary, strip the cylinder.

The strands of sliver will wipe the screen clean. *(K-1096) Wm. Shaw, Providence, R. I.*

Nylon-Mending Technique "Stuns" Pencil-Eraser Man

A manufacturer is usually given credit for finding every possible use for his products, but occasionally even we are stunned by the things people do with our simple products.

Here is a "kink" that surprised us when we discovered it.

When nylon stockings are made, two stitches sometimes pull together and stick to each other. Of course, this sticking together of the yarn leaves a hole where one loop of yarn is missing—or more correctly, where one loop is out of place.

The loops can be broken apart and brought back to their proper places with a soft eraser. It's done by stretching the stocking over an upside-down glass or inspection form and rubbing the stuck stitches with the eraser.

We've found that over 80% of the defects of this type are corrected in this manner. *K-1196) F. H. Eichhorn, Eberhard Faber Pencil Co.*

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Round Table

FOR EXCHANGE OF IDEAS—*The Round Table is open to letters from any and all readers discussing subjects relating to mill management, production, engineering, technology, etc. Names of contributors will be held confidential if so requested, but contributions must be signed with real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y. Write your message on card in Reader-Service Department if you wish.*

Job Assignments and Element-Time Values

At an informal discussion of engineers and timestudy men, the following were accepted as reasonable and fair job assignments and element-time values. It was pointed out that in many cases there were large differences between what were considered fair job sizes and what were actually up in the mills.

Bale opener: One man can cut and bundle hoops, and pick cotton from top burlap from eight to ten bales per hr. No oiling, sweeping, cleaning, or waste removal.

Opener feeder: One man can feed six bales per hr. No oiling. No bale opening, but man helps bale opener to dump bale and pick remaining burlap. Allowance must be made for cleaning and waste removal.

Picker tender: On one-process pickers, one man can doff 32 laps per operating hr., rack and weigh lap, but not record weight of lap. Allowance must be made for cleaning and waste removal. No oiling.

Card tender: One man can doff 1,000 units per 40 hr., hang and creel laps, oil, remove waste, clean, strip, and sweep.

Grinders: 50 to 60 cards can be handled per grinder. Grind two cards per shift; grind cylinder, doffer, flats. Oil comb boxes. Set, supervise, repair, replace bands and belts, and scour.

Drawing: One hand can doff 40 cans per hr., creel backs, clean, sweep, pick clearers every two hours.

Slubbers: Doff 11 min. per 100 unpacked bobbins; 12 min. per 100 packed bobbins. Creel 45 min. per 100 cans including piecing dump cans. Doffing includes cleaning rail, flyers, spindle tops, and back plate.

Intermediates: Doff 13 min. per 100 unpacked bobbins; creel 27 min. per 100 bobbins, including stripping bobbins.

Fine frames: Doff 8½ min. per 100 unpacked bobbins; 9½ min. per 100 packed bobbins. Creel 27 min. per 100 bobbins, including stripping bobbins.

Roving-frame fixers: 70 frames per fixer. Repair, change gears and roll settings, scour, replace belts and top rolls. Supervise. No oiling.

Roving hoisters: 600 bobbins per hr. Clean creel tops. Clean boxes. Return empty boxes and bobbins to tenders on previous process.

Spinners: Piece 20 sec. per bobbin, including cleaning stick. Creel 13 sec.

Doffers: Doff 1,000 bobbins per hr. Clean ends of frames and under-parts. Get bobbins and truck doffed yarn to spare floor.

Spinning fixers: Maintain 13,000 spindles. Repair frames. Replace belts, top rolls, and aprons. Assist in traveler change. Scour, change gears. Supervise spinners, doffers, cleaners, sweepers, etc.

Spinning-roving hoisters: 750 bobbins per hr. Clean creel tops, return empty roving boxes to elevator. *(R-485, Greenville, S.C.)*

Fire—Good Servant But Bad Master

Every little while you see articles in the textile press on fire prevention. The writers are supposed to be experts; and they very dutifully point out ways and means to fire prevention. The fires that destroy property and cause damage in our textile mills are due mostly to carelessness. And the sparker in this letter is to take up

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Concentrate, Nutley! What do we do when we're through running the machines?"

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NEW GARLAND RAWHIDE PICKERS

REINFORCED STICK HOLE

Molded rawhide reinforcements at the stick hole cut down stick hole wear in the new Garland picker.

Result: Longer picker life.

IMPROVED SPINDLE HOLE

The spindle hole is perfectly rounded, excavated, and strengthened by locked-in flanges at both ends.

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MOLDED FOR UNIFORMITY

The new Garland rawhide pickers are individually pressure molded to uniform dimensions.

Result: The elimination of filing and fitting.

STRENGTHENED PICKER HEAD

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Result: Perfect throw through a longer picker life.

Water Buffalo Hide

Prewar quality Water Buffalo Hides are used exclusively in the New Garland Pickers. Our past experience in picker manufacturing has proven that Water Buffalo Hide, because of its resilient and rugged nature, is the most suitable material for making box-loom pickers.

Thus we believe that Rawhide Pickers made from this material are more capable of withstanding the shock of today's high speed looms without inflicting serious damage to other parts of the loom.

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Atlas Launder-Ometers

used in testing of Detergents at Wyandotte Chemicals Corporation

ATLAS Launder-Ometers, used to determine properties of detergency, color fastness, and resistance to washing and mechanical action, accurately reproduce washing conditions at accelerated speeds.

A typical application of the Launder-Ometer is a series of exhaustive tests conducted by the U. S. Army Quartermaster Corps and the Wyandotte Chemicals Corp. to determine the degree of sterilization and fading caused by various laundering and sterilization treatments of two selected types of Army fabrics — a cotton knit, and a 50% wool, 50% cotton knit. In these tests, the fabric samples were washed in a number of solutions containing chlorine-liberating germicidal agents, while mechanical action was simulated by 15 stainless steel balls introduced into each jar.

Results of these tests enabled the Quartermaster Corps to develop sterilization procedures for Army Mobile Laundry Units, and to obtain a fabric capable of withstanding rugged washing. In this, as in many other ways, testing in Atlas Launder-Ometers resulted in substantial savings and better materials.

New research model Launder-Ometers for accelerated testing of larger samples have recently been developed by Atlas. These units, with capacities ranging from 20 pint jars to 6 half-gallon containers, are now part of the complete line of standard Launder-Ometers.

ATLAS ELECTRIC DEVICES CO.

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FADE-OMETERS • WEATHER-OMETERS • LAUNDER-OMETERS

Round Table

(Continued)

where the experts left off and point out how to apply water to the textile fire. In other words, how to apply water so that production loss, repairs, and expense will be minimized. The water is more important anyhow, for the experts are only guessing at fire prevention.

In the year 1885, the mills first hung up their water pails on hooks clamped to the posts in the room. That year, I was first employed in a card room; and also that year, the revolving-flat card was introduced. Since that time many improvements have taken place in the mills; but as I look around, I see the same fire-fighting equipment as in the year 1885. Water pails hang on hooks at every second or third post; and lint and other foreign matter foul the water, which, along with the pail, is neglected because nobody can see it from below.

Yet, even with pails, fires give little trouble if you know how to apply the water. Usually the employees get so excited at a fire that they run for the pail, drop water on the floor when they take the pail off the hook, and then throw more water on the frames and floors than they do on the fire.

Let's consider what usually happens when fire hits the picker room, since space forbids the consideration of all machines.

In most mills, the picker is stopped immediately, thus giving the fire an opportunity to find its way to the feed box. The cotton in process meanwhile has stopped between the two cages; and soon the cotton is ignited, creating enough heat to melt the solder and loosen the screening. The screens must be taken out for repair. The results of this method are production loss, repair expenses, wet belts, and messy floors.

In my experience as superintendent, I insisted upon having fire extinguishers, and refused to let my operators stop the picker during a fire. Let the machine run, and dispatch a man to the dust room with a fire extinguisher. There is little to burn in the dust room, but take no chances. By leaving the machine running, the operator gives the fire no chance to get back to the feed box because of the air currents that go against it. With the machine in motion, the cotton does not dwell and moves from every part of the machine. Screenings therefore are saved.

Here are the other details of what to do when the fire hits the picker: stop the feed; remove the lap; wet every inch of the floor inside the base

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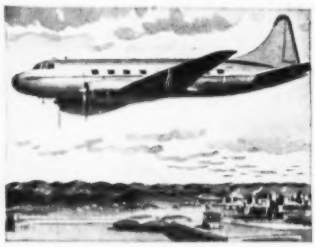

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Round Table

of the machine with a fire extinguisher.

On the card, do about the same. Never throw water on it. Throw out the feed shaft, back the feed roll, and remove the lap. Then, remove the flat-stripping roll, break the web, remove the can, and wet every inch of the floor inside the base with the fire extinguisher. It takes only a few seconds for the stock to move from the feed roll to the doffer, and little remains to be burned. Keep the card running, and there will be little damage.

In no case use the water pails. They are very expensive fire fighters. *(R-486, William Shaw, Providence, R.I.)*

Stopwatch Accuracy

Ups Efficiency

What is the highest-priced ingredient used in the mill? Time, of course. And it's the ingredient most subject to waste, too. Any move that reduces waste-time by as little as one or two percent will show directly in profit.

Each foreman should be taught to use the stopwatch. If he is not given permanent possession of one, he should at least have one long enough to get a better idea of how split seconds may be used. And he ought to be encouraged to request use of a stopwatch any time he feels the need.

There have been some excellent watches released from government surplus stock and retailed at prices ranging from $9.95 to $12.95. If these are not now obtainable, the foreman should buy at the regular market price. It is a relatively small investment for the one tool needed to check waste motion, lost seconds, and minor inefficiencies.

In small mills, the advantages of the foreman's ability to use the stopwatch are obvious. Yet the larger mills, too, could use the foreman to bridge the gap between the time-and-motion-study department and the worker. If the foreman learns only to respect the results of time studies made by others, the cost of a watch will soon pay off. And when he begins to value his seconds as well as his minutes, he is well on the way to self-imposed efficiency.

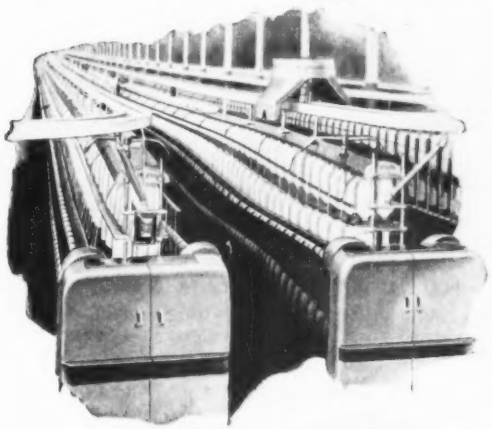
Engineering time studies call for more education and training than the average foreman is likely to have. Yet, the latter can uncover some very interesting facts with a watch. The relative speeds of certain operators can be determined accurately only with a watch. Otherwise, the average foreman is likely to confuse a lot of unnecessary

(*Continued on page* 204)

Lower costs and increased operating efficiency result when equipment is made appreciably lighter with Dow

MAGNESIUM

the world's lightest structural metal!



Cut dead weight—increase machine speeds with Magnesium

Magnesium is the obvious metal for high speed rotating and reciprocating machine parts. Magnesium is light, yet remarkably strong and durable. And magnesium is available in all common forms—from sand castings and die castings to an almost unlimited variety of extruded shapes—to simplify design, speed fabrication and lower costs.

And this is true of many, many different kinds of machines. If you are trying to cut excess pounds off parts that go into your equipment, there's one material that stands head and shoulders above all the others for that job. It's magnesium, the world's lightest structural metal.

Magnesium is 33⅓% lighter than aluminum, its closest rival—75% lighter than steel. Yet for all its lightness, magnesium is a thoroughly sound material and is easily worked by conventional shop methods.

Designers and manufacturers of textile equipment, for example, know the importance of keeping dead weight down to an absolute minimum. They've seen how magnesium pays by making reciprocating parts appreciably lighter—and how lighter parts increase operating speed, lower down-time and reduce power requirements. Magnesium can pay for you, too. Write for your free copy of "How Magnesium Pays".

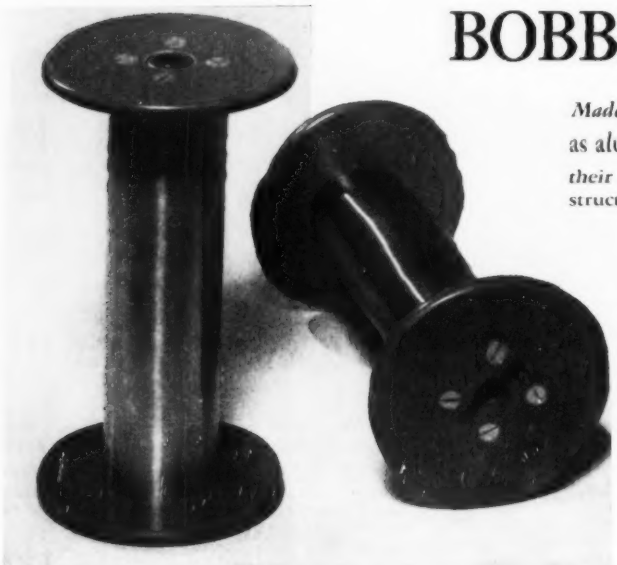
MAGNESIUM DIVISION
THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN
New York • Boston • Philadelphia • Washington • Cleveland
Detroit • Chicago • St. Louis • Houston • San Francisco
Los Angeles • Seattle
Dow Chemical of Canada, Limited, Toronto, Canada

Lighter Products Sell—make your product Magnesium Light!

For Nylon or Other High-Tenacity Yarns Use
LESTERSHIRE

Unit Construction

BOBBINS



Made from the finest stable materials, such as aluminum, magnesium, and bakelite or *their combinations Lestershire Unit Construction* Bobbins . . .

- *Withstand the crushing effect of nylon* and other high-tenacity yarns without distortion.
- *Are impervious to steaming* or other moisture conditions.
- *Machined precisely* for concentricity and constant balance, whether empty or filled with yarn.
- *Finished satin smooth,* to prevent yarn abrasion at any time.
- *Heads are interchangeable,* replaceable at any time right in the mill, easily and quickly, with no loss of concentricity.
- A size and shape for your every need.

Lestershire Unit Construction *Bobbins* are the most *efficient* bobbins you can buy, assuring longer bobbin life and longer spindle life under today's strenuous conditions of yarn tensions and high speed production.

SEND FOR SAMPLES AND TEST THESE FINE BOBBINS FOR YOURSELF.

LESTERSHIRE SPOOL & MFG. CO.
JOHNSON CITY, NEW YORK

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R. B. Dorman—1000 Peachtree St., Atlanta, Ga.
Joseph H. Windle, Jr.—231 So. Main Street, Providence 3, R. I.
Odell Mill Supply Co., Greensboro, N. C.
Greenville Textile Supply Co., Greenville, S. C.
W. S. Taylor, Inc., 52 Vanderbilt Ave., New York 17, N. Y.

READER-SERVICE DEPARTMENT

This four-page insert is at your disposal to help you derive increased benefit from your readership of TEXTILE WORLD. We hope you will study it, get well acquainted with it, and use it freely.—The Editors.

TO COMMENT on anything about TEXTILE WORLD, use the card below. We hope you will use it to give us your opinion, favorable or unfavorable, on any editorial material in order to help us serve you better. Use it to discuss textile-manufacturing problems, perhaps enlarging on something already printed, for publication in the Round Table department. Use it to tell us what you would like to see published to help you with your mill problems.

TO INQUIRE about any mill problem you may have, use the card below. If you have a technical question, submit it to our Questions and Answers department. Be sure to give as complete details as possible so that your question can be fully understood.

TO CONTRIBUTE kinks, textile-news notes, or other brief material, use the card below. If you have some useful idea for cutting costs, improving quality, or increasing production, enter it in our KINK CONTEST. We also warmly welcome queries as to the probability of our accepting for publication any specific articles you may contemplate writing for us.

SEE FOLLOWING PAGES FOR ADDITIONAL SERVICES OFFERED

USE THIS CARD

Dear Editor:

(over)

MANUFACTURERS' BULLETINS

FREE FOR THE ASKING

Reviewed here is the outstanding trade literature of the month. Items are listed one month only—no repeats. Mill executives may request copies of literature by using cards on the next page.

A rotary hosiery-dyeing machine for smoother, tailored dyeing is featured in a bulletin prepared by Burlington Engineering Co., Inc. Design features of the new unit are enumerated, and there are several pictorial views shown. **(F-1)**

Spinning frame and twister parts are the subject of a series of leaflets issued by Precision Gear & Machine Co., Inc. Among the items featured are lifter rods, jack bearings, non-sloughing cams, cam-bearing units, and silent chain drives. **(F-2)**

A busway used principally as feeder lines for the transfer of heavy current is described in a bulletin published by The Trumbull Electric Mfg. Co. Six actual installation photos show application of the unit where close voltage regulation was required. The back cover contains a sectional photograph showing narrow bus bar sizes, housing design, fastening methods, and standardized construction. **(F-3)**

A catalog of No. 90 winder parts has been prepared by Kanoy & Sons Machine Co., Inc. There are data on many parts, such as spool spindles, traverse bars, quill spindles, gears, thread-guide holders, bunch builders, and cup-former assemblies. **(F-4)**

Knitters' attention is invited to a series of catalogs made available by Jacquard Knitting Machine Co. One catalog deals with the Model "LH" circular links-and-links machine and shows a variety of products which can be produced on the machine. Other catalogs deal with the Model "TJ" circular transfer machine and the Model "TA" plain circular transfer machine. **(F-5)**

"The Butcher, The Baker, and the Candlestick Maker" is the title of a recent folder published by Haskell—Dawes Machine Co., Inc. Twisting and laying of cotton, wool, flax, hemp, jute, synthetic, and paper yarns is outlined. Details are given on three series of twisters, two ropers, and one type of layer. **(F-6)**

Industrial air conditioning with both central-station systems and atomizer humidifying systems is announced in a release from White & Co., Inc. A change in corporate name is also explained. **(F-7)**

Self-lubricating and oilless bearings, bushings, and machine parts are described in a catalog issued by Neveroil Bearing Co. Dimensional tolerances are given for various uses of plain, flanged, and thrust bearings. An extensive catalog lists inside diameter, outside diameter, and length of standard sizes of bearings. **(F-8)**

Quill cans of proven quality are the subject of a bulletin prepared by J. C. Paddock Co. Details of an exclusive Side-lip projection include a claim that quills are trapped 98% of the time. Weave-room costs are also claimed to be lowered in another section of the bulletin. **(F-9)**

Elevators and portable cranes are featured in a 36-p. book published by Barrett-Cravens Co. The elevators shown include portable hand-operated types, electric-operated portable types, telescopic models, and several others. Described and illustrated in detail are the cable safety device, special hoists, and other security features. **(F-10)**

Inadequate roof anchorage in moderately strong winds can result in heavy damage, according to a series of pictures in a recent issue of the *Factory Mutual Record*. There are also features dealing with prevention of fuel explosions in gas-fired ovens and dryers, destructive power of starch dust, and dangers of oil-filled transformers. **(F-11)**

Aluminum and magnesium components and accessories for the textile industry are featured in a booklet issued by High Duty Alloys Ltd. Castings, extrusions, slabs, forgings, billets, ingots, and fabrications such as textile bobbins are described and illustrated. The role of aluminum in the current campaign for revitalizing the British textile industry is also studied. **(F-12)**

Do you know where the most advantageous starting point for a modernization plan is? A logical answer to that question is presented in a folder published by Geo. S. Harwood & Son. Sketches include seven woolen-card feeders, three worsted-card feeders, seven garnet feeders, and five continuous feeders. **(F-13)**

A pneumatic roll picker which removes lint, fly, and trash by wrapping it around the pick is described in a bulletin issued by M-B Products. Mill results are documented in the publication, and a service-parts list is included. There is also a partial list of mills in the U. S. and Canada which use the roll picker. **(F-14)**

Handling of cotton bales with a new attachment for their power fork trucks is discussed in a bulletin issued by Lewis-Shephard Products, Inc. The attachment, called the Gunn-Pylate expediter, is a hydraulic side-clamping feature designed to replace conventional forks. Pictures and operational data are given. **(F-15)**

Rayon production in Cuba is the subject of a brochure issued by Rayon Consultants, Inc. Written in an easy style, the article gives the historical background, outlines plant construction, and discusses the equipment and machinery used at the new plant. **(F-16)**

Resurfacing of your mill roof, weather it be tin, iron, concrete, slag, gravel, tar paper, or felt—is discussed in a folder made available by Stonhard Co. Use of plastic or liquid roof resurfacers with simply a brush or a trowel is explained. There is also mention of other materials for repairing, for making acid- and grease-resistant floors, and for quick patches to busy floors. **(F-17)**

Vacuum extracting of fabrics with the adjustable-slot vacuum-extracting box is described in a circular from Birch Bros., Inc. Several applications are listed along with a treatise on general specifications. Another circular is de-

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From (give real name):

.....

Position .....

Mill .....

Address .....

City..... State.....

When published print:

☐ my real name

☐ the following pen name .....

☐ or your number.

Place 3¢ stamp here

TEXTILE WORLD

330 WEST 42nd STREET

NEW YORK 18, N. Y.

McGraw-Hill Publishing Co., Inc.

voted to a vacuum-pump unit and a strainer or flock trap. **(F-18)**

The average age of corporate officers is 54 yrs. today, as compared with 47 yrs. in 1929, according to a brochure published by Boos, Allen & Hamilton. A plan for the maintenance of a sound management team is presented in the folder. An interesting chart illustrates the average ages of executives of 1929 and 1949. **(F-19)**

Manufacturers and users of chlorine-bleach solutions will be interested in a 68-p. technical bulletin issued by Solvay Sales Div., Allied Chemical & Dye Corp. General properties of hypochlorous acid and its salts, types of industrially important bleach liquors, and the preparation of bleach liquors are covered. Chlorination equipment and the production of chlorine are also discussed. **(F-20)**

Steel-mesh products and applications are discussed in a bulletin published by Joseph T. Ryerson & Son, Inc. Engineering data includes load deflection, air-flow comparison, and free openings of both standard and flattened mesh types of expanded steel. There are also a list of sizes with dimensions and weights, illustrations of mesh, and application data on expanded-metal grating. **(F-21)**

The Forty-Niner, this year's new edition a 192-page transmission-equipment catalog, has been issued by Patron Transmission Co., Inc. The descriptive manual supplies complete data, including prices, on over 5,000 items of the company's broad line of power-transmission equipment and conveyor supplies on hand for immediate delivery. **(F-22)**

A guide to Milmer 1, an industrial preservative, has been prepared by Monsanto Chemical Co. The material, chemically copper-8-quinolinolate, is claimed to be one of the most powerful rot and mildew preventives known. The bulletin gives detailed descriptions of the product, minimum formulations, and methods of application to properly protect textiles, plastic-coated fabrics, protective coatings, and other products. **(F-23)**

A piece-end sewing machine for use in bleaching, dyeing and finishing applications, is described in a bulletin published in this country by Trumeter Co. Several improvements over the previous design of this William Birch machine are given. Other special features are listed along with shipping data. **(F-24)**

Offered to executives interested in engineered painting is a new pamphlet published by U. S. Gutta Percha Paint Co. The publication shows how painting works with light to increase profits and discusses choice of colors for walls, ceilings and working atmospheres. There is a chart showing recommended levels of industrial illumination. **(F-25)**

A catalog of organic chemicals has been prepared by Eastman Kodak Co. Many new items are listed, in addition to a complete list of established chemicals. Special reagents, spot-test reagents, amino acids, alkaloids, indicators, and isotope concentrates of carbon and nitrogen are cataloged in separate sections, as are liquids for refractive-index determinations, vitamins, sugars, and hydrocarbons. **(F-26)**

Sheet-metal products for the textile industry are pictured and described in a folder made available by Jenkins Metal Shop. Among the items featured are cylinder heads, card screens, lickerin screens, cylinders, aspirators, and picker screens. **(F-27)**

Dyeing equipment of stainless-steel construction is described in a series of bulletins made available by Burlington Engineering Co., Inc. Package dyeing, piece dyeing, and combination beam and package dyeing are covered. A handy machine for testing sample lots in the dye house is also pictured and described. **(F-28)**

Hosiery finishers and dyers are invited to send for an introductory folder about a new cleaning and lubricating agent being made by College Pharmacy Products. The product is for cleaning and lubricating boarding and preboarding forms. **(F-29)**

CARDS ON THIS PAGE are for the use of mill executives in writing for manufacturers' bulletins reviewed here, as well as for additional information about items appearing in our TEXTILE EQUIPMENT NEWS, NEW DYES AND CHEMICALS, and USEFUL ACCESSORIES departments, or in the ADVERTISING PAGES.

Write in the box of any one coupon the letter and number printed at the end of the editorial item that interests you. In the case of advertisements, enter the letter A followed by the page number. If there is more than one advertisement on that page, please add the initials of the manufacturer. In every case, we'll advise the manufacturer as to what you want in order that you may receive the reply direct from him.

Instructions

1. Fill out completely one space (name, title, company, address, and item designation) for each piece of information wanted. Put only one item designation in each square.

2. Use bottom card only if making one to four requests, both cards if making five to eight.

3. Detach, add postage, and mail.

Write in box the designation of item on which more information is wanted. A-219 A.F.Co.

Coupon void if not filled out completely

Name of my Mill Clearview Mills

Street 190 S. Main St.

City Clearview. State N.C.

My Name Wm. L. Wilson

Title Overseer

TEXTILE WORLD, New York 18, N. Y.

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(Good until January, 1950)

TEXTILE WORLD, New York 18, N. Y. (Sept.'49)

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City ..... State .....

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Title .....

(Good until January, 1950)

TEXTILE WORLD, New York 18, N. Y. (Sept.'49)

Place 1¢ stamp here

Post Card

TEXTILE WORLD

330 WEST 42nd STREET

NEW YORK 18, N. Y.

McGraw-Hill Publishing Co., Inc.

Starch stabilizers for improved uniformity of viscosity in textile sizing and printing are one of the subjects of a folder issued by R. T. Vanderbilt Co., Inc. Also described in detail are other products such as fungicides, bactericides, dispersing agents, talcs, clays, and other inert fillers. **(F-30)**

Skillful use of color, one of the most result-getting aids to practical modern merchandising, is discussed in a booklet published by The Hinde & Dauch Paper Co. The 28-page booklet uses color lavishly to illustrate color effectiveness as applied to many nationally known products. Emphasis is placed on the influence of color in pushing a product from marginal sales to record volumes. **(F-31)**

"The Handling of Webs and Monofilaments" is the title of a booklet made available by Industrial Ovens, Inc. It is a reprint of a paper originally presented before the American Society of Tool Engineers. The basis of the study is broad, to show the similarity of handling problems encountered in extrusion takeup of wire or cable, for example, as compared with the coating of textiles with plastic for insulation or for decorative coating of fabrics or paper. **(F-32)**

Multi-pointer gages of the diaphragm-operated type are described in a bulletin issued by Bailey Meter Co. Use of the diaphragm unit is explained, and some of the many ranges available are listed. Four styles of casings are shown. Data include shipping weights plus dimensions. **(F-33)**

A fully automatic filling winder, the Hacoba, for cotton, condenser cotton, cotton crepe, wool, silk, rayon, worsted, jute, linen, and flax is featured in a catalog published by Atkinson, Haserick & Co. Examples of high production possible with the unit are given, and outstanding design and operating features are pictured. **(F-34)**

Steam cleaning can be available to small industrial plants at relatively low cost, according to a bulletin prepared by Homestead Valve Mfg. Co. A small steam cleaner wich requires only 27x37-in. floor space and develops 80 to 120 lb. of working pressure is described in the publication. Other units for different requirements are listed, and their general specifications are given. **(F-35)**

Right data sheets on hosiery-finishing equipment have been made available by Philadelphia Metal Drying Form Co., Inc. Both solid and adjustable boarding forms are described, and information about multishape attachments, electric boarding equipment, and steam tables is included. **(F-36)**

A short-center leather-belt drive for compressors, fans and pumps is the subject of a handbook issued by J. E. Rhoads & Sons. A description of the basic requirements of efficient driving is followed by details on the Rhoads system, several sketches showing the importance of belt tension, and pictures of actual installations. **(F-37)**

Laminated plastics for the textile industry are discussed in a folder published by Synthane Corp. Hosiery-examining forms, redraw tubes, redraw chucks, redraw caps, dryer poles and dye sticks, bobbins for nylon sizing, and carrying boards are described and sketched. **(F-38)**

A junior bleaching unit for installations which do not require a full-sized continuous-bleaching range is described in a bulletin issued by H. W. Butterworth & Sons Co. General specifications, sketches, and more detailed descriptions of various types of units are included in the publication. **(F-39)**

Sixty actual samples of knitting yarns have been attractively put up in a folder from Valdese Mfg. Co., Inc. Direct-, developed-, vat-, and sulphur-dyed samples are shown. **(F-40)**

Hubs, bushings and adapters for pulleys, sprockets, sheaves, or gears are described in a catalog published by Dodge Mfg. Corp. Tables of specifications for each of the three products are given, and there is a pictorial demonstration showing the simplicity of installation and removal. **(F-41)**

Vinyl corrosion-resistant protective coatings for application to wood, metal, stone, brick, and concrete structures and equipment are discussed in a folder prepared by Dennis Chemical Co. Characteristics of the coating include possibility of its application to aluminum, cadmium, and other metals by first coating the surface with a special primer. **(F-42)**

Correct choice of an insulation tester is simplified by a bulletin issued by James G. Biddle Co. Ten different types of Megger instruments covering ranges from 0.01 ohm to 10,000 megohms and including hand-operated, motor-driven, rectifier-operated, combination types and recording sets are discussed. **(F-43)**

A newly-designed map of the nation-wide domestic air-express system of the United States has been drawn up by Air Express Div. of Railway Express Agency, Inc. The map measures 22x21 in. and can be used as a wall or desk-top piece. A supplementary panel at the bottom of the map lists, alphabetically by states, the more than 1,200 points that receive direct air-express service. **(F-44)**

Speed reducers are featured in a 44-p. bulletin issued by Farrell-Birmingham Co., Inc. Contents include complete descriptions of units of the single and double reduction types, specifications, horsepower-rating tables, overhung load capacities, dimensions, and weights. **(F-45)**

Simplified procedures for performing more than threescore maintenance, cleaning, and related tasks in textile mills are given in an 18-page Textile Digest made available by Oakite Products, Inc. The cleaning manual offers valuable recommendations on latest revelopments in materials and methods designed to keep textile equipment and machinery at peak operating efficiency. There are also helpful data on effective slime- and mold-control methods, on descaling techniques for heat-exchange equipment, and on a broad range of maintenance and sanitation work. **(F-46)**

A handbook covering chrome-nickel stainless-steel sheets and plates has been made available by Eastern Stainless Steel Corp. The 128-p. reference and technical manual is profusely illustrated and gives data on many types of the steels. Operations in the manufacture of the products are also discussed. **(F-47)**

"How To Sweep Textile Floors With a Cotton Mop" is the title of a folder published by G. H. Tennant Co. Designed to show mills how correct use of a dry mop can reduce floor-maintenance costs, the folder discusses mop preparation, sweeping techniques, methods of cleaning mops, and special tips on how to use a mop most efficiently in hard-to-clean areas. **(F-48)**

A multi-low-range universal tester for thread, plastics, film, cord, felt, and fabrics is described in a catalog issued by W. C. Dillon & Co., Inc. The mechanism and dial are covered thoroughly as is detailed information on adjustment and settings. **(F-49)**

Place 1¢ stamp here

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TEXTILE WORLD

330 WEST 42nd STREET

NEW YORK 18, N. Y.

McGraw-Hill Publishing Co., Inc.

Write in box the designation of item on which more information is wanted.

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Name of my Mill .....

Street .....

City ..... State .....

My Name .....

Title .....

(Good until January, 1950)

TEXTILE WORLD, New York 18, N. Y. (Sept.'49)

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My Name .....

Title .....

(Good until January, 1950)

TEXTILE WORLD, New York 18, N. Y. (Sept.'49)

Walton

INDUSTRIAL HUMIDIFIERS

for lowest possible cost humidification

Investigate the features of the WALTON system . . . they will help you cut production costs by providing the required maximum amount of humidity with a minimum consumption of power, water and with least possible maintenance. Consider these features:

- . can be installed anywhere, in high or low ceiling rooms and at any location where needed no floor space required.
- . low installation cost . . . no compressors, duct work, expensive air or drain piping required.
- uniform humidification assured by series of zone automatic control stations.
- . an ideal means for providing either "spot," "booster," or complete humidification.
- . where lint is present, working parts are filter-protected.
- . simplicity assures low maintenance cost by plant's own crew
- . factory-assembled, ready to attach to local water supply
- . distribution directionally controlled.

You can simplify and readily solve humidification problems when you have controlled humidification as provided by Walton.

NOW AVAILABLE . . . New MODEL 30 . . . 3 gallons per hour . . . self-contained . . efficient . . filter-protected.

WALTON LABORATORIES, INC., IRVINGTON, N. J.

SEND COUPON

WALTON LABORATORIES, Inc.
Irvington 11, N. J. *Please refer to T W 9-49*

Please send me a FREE copy of the informative, illustrated booklet, "*Industrial Humidification.*"

NAME_____

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STREET_____

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SECURING WARP ENDS with "SCOTCH" Textile Tape No. 300 at Textron, Inc., East Greenwich, R. I. Easy-to-apply tape speeds accurate holding of threads during transfer and threading-in on Tricot knitting machines.

Textron's* Threads Stay Put with Tape

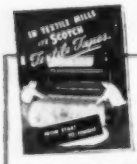
Usual methods of fastening warp threads at Textron slowed down operations, often required unusual operator skill.

Time-motion tests proved "SCOTCH" Textile Tape No. 300 does a better job, faster. Now, Textron uses this amazing new tape to speed many production operations.

This is only one of many "SCOTCH" Textile Tapes built to industry specifications—designed to save you time and money. Why not let one of our tape engineers show you these profit-building short cuts?

Write us today for complete information. No obligation.

*Reg. U.S. Pat. Off.



FREE FOLDER illustrates how "SCOTCH" Textile Tapes simplify and improve production operations. For your copy write Dept. TW9.

QUICK FACTS ABOUT "SCOTCH" TEXTILE TAPE No. 300

- **FAST** — goes on with finger pressure, no special equipment needed.
- **NEAT** — will not injure any fabric, removes cleanly from all materials.
- **STRONG** — adhesive tailored to hold heavy or fine thread. Tough paper backing.
- **ECONOMICAL** — saves labor time, eliminates many former wastes.

ANOTHER 3M COMPANY PRODUCT

Made in U. S. A. by **MINNESOTA MINING & MFG. CO.** ST. PAUL 6, MINN.
also makers of other "SCOTCH" Pressure-Sensitive Tapes, "UNDERSEAL" Rubberized Coating, "SCOTCHLITE" Reflective Sheeting, "SAFETY-WALK" Non-Slip Surfacing, "3M" Abrasives, "3M" Adhesives.
General Export: DUREX ABRASIVES CORP., New Rochelle, N. Y.
In Canada: CANADIAN DUREX ABRASIVES LTD. Brantford, Ontario

Round Table

(Continued)

(*Continued from page 196*)

fuss and motion for actual speed. The watch doesn't see the unnecessary motion.

Conspicuous use of the stopwatch as a method of speeding up work will be resented by the employees. The tactful foreman need not make a great display of his activities. In addition, the foreman could point out to workers that stopwatch studies help locate where effort is wasted; and that better spent effort means more production and better wages to employees. It may be possible to figure out better methods that aid the employee in earning more money without the expense of extra effort.

A bit of experience with the stopwatch soon teaches the foreman a new sense of time value, and new standards for judging it. His time studies have the advantage of being made at the work center and under normal conditions. If the subject grows too complicated for his efforts alone, he may discover spots where further time studies by competent engineers would be worthwhile. (*R-488, George M. Dodson, Harrisburg, Pa.*)

Test Elasticity Of Rubber Yarns

Elasticity in rubber-yarn fabrics depends upon the number and type of shuttles used, among other things. Rubber uses different shuttles since the latter have special built-in tension clasps for the yarn.

The elasticity may be found by testing each cone of yarn. Certain rubbers stretch 90 to 95%; while others stretch 120 to 180%. Certain places in the yarn may stretch 240%. These are known as dead places. They occur when the rubber-spinning machine is stopped. Such yarn is bad and must be kept out of the fabric.

The variation in rubber-yarn elasticity should not be more than 10%. If the required elasticity is 120%, the variation may go from 119 to 129%. Cones that do not measure up to that elasticity should not be used for the cloth.

Yarn on quills may also be checked for elasticity. The percentage of elasticity in quill yarn is about 3% less than that in cone yarn. While three tests may be satisfactory from each cone; about 15 quills should be tested per every 100 quills used.

Such a checkup of elasticity in rubber yarn on cones and quills should prove useful in the manufacture of good cloth in the rubber trade. (*R-487, Philadelphia, Pa.*)

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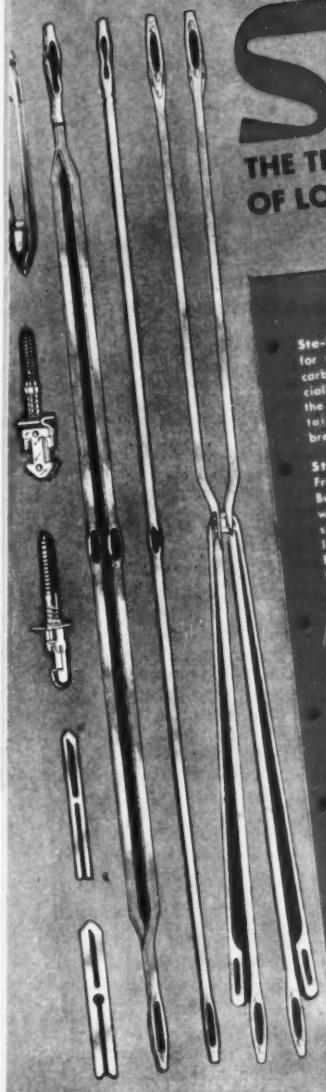

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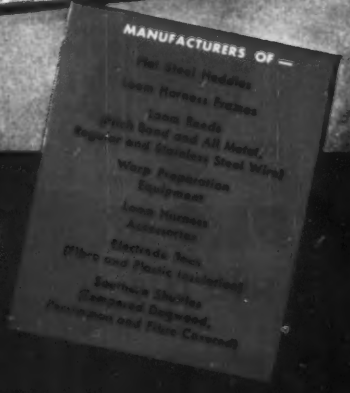

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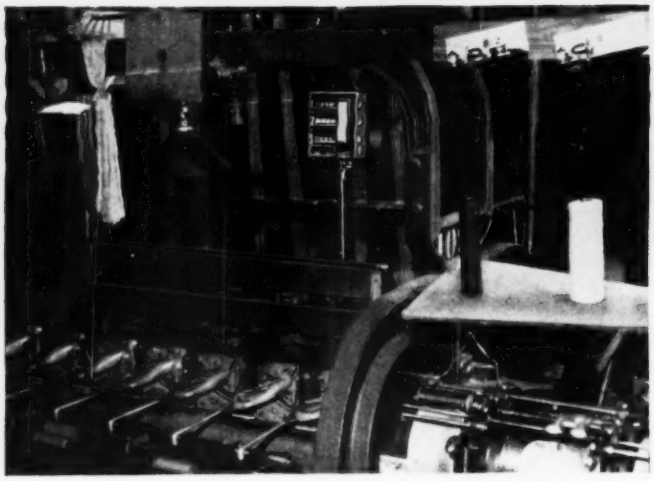

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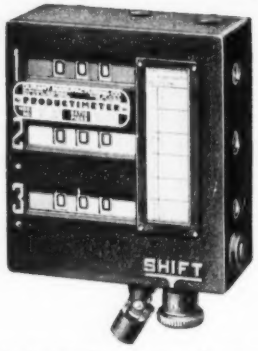

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Questions AND Answers

Removal of Moist Air Reduces Slashing Cost

Technical Editor:

The figures given in Table 4 of the article "Textile Dryers Studied by ITT" (TW, March '49, p. 116) interested us. We'd like to get more details on the subject.

Can you give us figures that compare steam consumption between two-cylinder and three-cylinder slashers with and without exhaust ducts over the cylinders and size boxes? Also, we'd like to know to what extent these exhaust ducts affect slasher-room temperature. (0324)

The two-year study made by the Institute of Textile Technology was aimed primarily toward learning the relative costs of drying textile materials by the various heat sources available: steam, electricity, and infrared heat. No comparisons were made between a two-cylinder slasher equipped with exhaust ducts and one without ducts, or between a three-cylinder slasher with ducts and one without.

In general, Table 4 of the article indicates the importance of moist-air removal. As shown in the table, the dryers are described as follows:

A is a three-cylinder slasher
B is a seven-cylinder slasher
C is a two-cylinder slasher
D is a four-cylinder slasher
E is a thirty-seven-cylinder cloth dryer.

Since slasher B was not equipped with means for removing moist air, it should not be included in a study of the advantages of exhaust ducts.

Slasher A (with three cylinders) had a poor moist-air-removal system. On this slasher, it cost 0.163¢ to evaporate 1 lb. of water from the warp yarn.

Slasher C (with two cylinders) had a fair moist-air-removal system. On C, it cost 0.135¢ to evaporate 1 lb. of water from the yarn.

Cloth dryer E (thirty-seven cylinders) also had a fair system for removing moist air. On E, it cost 0.130¢ to remove 1 lb. of water.

Slasher D (four-cylinder slasher)

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N. Y. — September, 1949

Rayon Teaching Aids Requested by 42,291 Teachers

During the 1948-49 school year 42,291 teachers and others asked American Viscose to send them rayon teaching aids consisting of graded courses suitable for all grades from the first through college. These courses are an integral part of Avisco's broad educational program to increase public acceptance for rayon.

One of the major reasons for the popularity of this material in the schools is that primary teachers feel that pupils should learn about rayon as soon as possible and elementary textbooks ignore it. In addition, high school and college professors depend on Avisco to keep them abreast of the many new developments in rayon which come too fast to be included in standard textbooks.

Hundreds of retail stores and other business firms also wrote in for the teaching aids for use in sales training classes and to provide their executives and employees with general information about rayon. Extension personnel and many individual students also requested them, as did a variety of foreign educators. In addition leaders in 4-H and home demonstration work made use of them in textile and clothing courses given the country over.

A catalogue listing all Avisco material is available on request.

Avisco to Supply Advance Information on New Rayon Fabrics

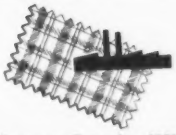
"What's New in Rayon Fabrics," a series of swatched bulletins featuring newly developed rayon fabrics, is now being issued by American Viscose Corporation to 4000 leading retailers. These releases are intended to include fabrics of unusual merchandising and sales value. The first bulletin features "Flandandy," a new spun rayon flannel by Soap 'n' Water Fabrics and points out that it sells under a consumer's "money back" guarantee that it is unconditionally washable.

Latest in Avisco Public Relations Advertising Promotes Rayon for Year-round men's suits

"The quality $35.00 suit is back," says the latest Avisco public relations advertisement stresses the performance, styling and price appeal of rayon suitings. It appears in *Time*, *The New Yorker*, *Journal of Commerce* and *Wall Street Journal*.

RAYON 20 YEARS AGO

NEW YORK, September, 1929—The new Corinthian temple display of the Viscose Company at the Salle Moderne features what is "probably the most elaborate setting ever built" for a textile exhibit.



SCOTLAND, September, 1929—A new element was introduced into the industrial activities of the Scottish Border last week with the opening of a new rayon factory at Jedburgh.

NEW YORK, September, 1929—Rayon is being featured as a covering for upholstered furniture by a number of department stores which emphasize rayon's beauty and wearing quality at a lower price.

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Questions and Answers

(Continued)

had a good moist-air-removal system. D removed 1 lb. of water for 0.111¢.

The importance of removing moist air is evident from these figures. Note that slasher C and cloth dryer E both had "fair" moist-air-removal systems. They are considerably different machines (one with two cylinders and one with thirty-seven cylinders), and they process different kinds of textile material (one warp yarn, the other woven cloth). Yet, the cost of evaporating water was quite comparable (0.135¢ per lb. and 0.130¢ per lb.).

Exhaust ducts connected with collection hoods over the cylinders apparently do not make a very efficient moist-air-removal system. Slasher A was equipped in that manner. The trouble is that such a system does not expose the warp sheet to a strong, steady flow of air. Slasher A had an exhaust fan that pulled 12,000 cu. ft. of air per min. It removed moist air after it reached a point well above the warp sheet. The air, of course, would flow into the hood around the edges. No positive changing of air would necessarily take place in the immediate area of the yarn.

Slasher D, which had a good moist-air-removal system, exposed the yarn sheet directly to a flow of air. Instead of having hoods over the cylinders, the drying area of this slasher was totally inclosed. A 12,000 cfm. fan was used to pull air, but air inlets were located at the bottom of the inclosure. Air that entered the exhaust point above the cylinders had to pass through the yarn sheet.

Slasher D had four cylinders, but the yarn sheet was split and all of the ends by-passed either the first or second cylinder. Actually, the only difference between A and D was their moist-air-removal systems.

In regard to steam consumption, there are no figures available on the actual amount consumed. The cost of steam per pound of water removed from the yarn, as given in Table 4 and explained in the article, is standardized because of the differences in the cost of coal in different localities where the dryers were studied. The basis for standardizing the cost as 75¢ per 1,000 lb. of steam was:

A coal cost of $7.50 per ton.

A heat value of 14,000 Btu. per lb. of coal.

A boiler efficiency of 65%.

A steam-pressure gage of 120 lb. per sq. in.

An overhead expense of 53%.

No figures are available on the effect exhaust systems have on slasher-

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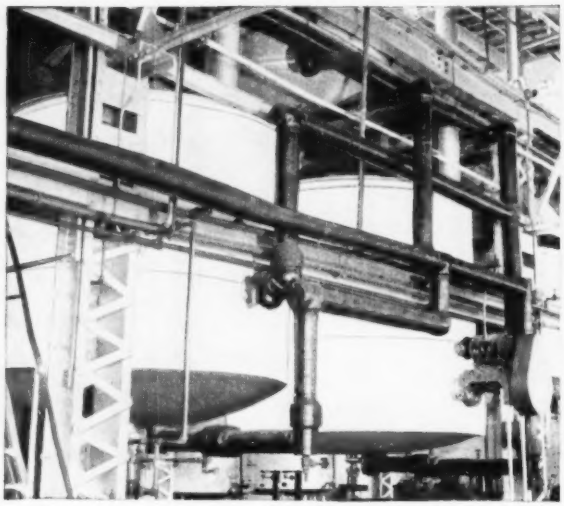

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Questions and Answers (Continued)

room temperature. Offhand, a fair guess would be that a drop of about 10° F. could be expected.

From mill experience gained in the past few years from the study of slashers, it probably would be safe to say that to operate at its highest peak of efficiency and economy a steam-cylinder slasher should have:

1. Three cylinders (probably two 5-ft. and one 7-ft.).
2. The cylinder intake line and exhaust line equipped with automatic heat controls (which accounted for the economical operation of slasher B).
3. The drying area inclosed and equipped with means for entering air at the bottom of the inclosure and exhausting it from above the cylinders.
4. The slasher equipped with variable-speed motors and automatic controls to regulate running speed in relation to drying speed of the cylinders.

Double Carding Cotton Gives a Clean Sliver

Technical Editor:

What is double carding? If it is using two cards, just how is the stock processed? If it is using only one card, at what speed is the card run and how is the stock processed (9325)

Double-carding as it is usually practiced in cotton-type mills is the process of passing stock twice through a regular cotton card.

Cotton, or other fiber, is opened in the usual way in the opening-room machines, made into a lap on the picker, and run through the card. Instead of the card sliver being creeled in the drawing frame or lap winder, the sliver is returned to the opener room or picker room and is torn up in a waste machine. The reopened sliver stock is then made again into a picker lap, either on a regular picker or on a one-beater or two-beater waste picker. (For a more even lap, the regular picker is preferred.) This lap is then run through the card.

No special settings of the card are used. No card speeds are changed.

The advantage of double carding is in better cleaning. Two passes through the card do a pretty thorough job of cleaning the stock. Test results of double carding are favorable in comparison with carding and combing. Double-carded stock is nearly as clean as carded-and-combed stock. But, of course, it is not so strong because double carding does not take out the 15 to 18% of short fibers that combers take out.

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Questions and Answers

(Continued)

carding causes more waste than single carding; about the same amount of fly and strips is taken out during the second run as during the first. Also, more fibers are broken during the run through the waste machine and the second run through the picker and card. No comparative figures on neps, variation, and breaking strength of yarn between single and double carding are at hand at the moment; but it seems that there would be a good possibility of increasing neps and variation and possibly decreasing yarn strength.

In a nutshell, a good rule to follow is to double card if cleanliness is needed and the extra processing is more economical than the use of a higher grade cotton.

Loom Condition or Warp May Cause Slack Cloth

Technical Editor:

What causes cotton cloth to get slack at one side of the loom? Is this defect caused by the warp or the loom? (9260)

Cloth weaving slack at one side may be caused by either a loom condition or a poorly made warp beam.

Loom faults may be temples that do not hold the cloth out properly, dull sandpaper or worn steel pins on the cloth roll, loose crank arms, and loose beam stands.

A warp beam that is soft at one side would cause slackness at one side of the loom.

Better Twill Line Desired by Weaver

Technical Editor:

Can you tell me how I can set a Crompton & Knowles W-3 loom to bring out the twill more prominently on the face than on the back of the cloth? I have set an early and a late shed but neither seems to improve the weaving. Our layout is warp and filling 4½-run yarn with right-hand twist, width 76 in., and weave 2 up-2 down twill. (9301)

The best way to get a prominent twill line is, of course, to change your 2 up-2 down weave to a 2 up-1 down weave. If you prefer to stick to your present weave, however, there are a few minor adjustments that might help you.

Raising the whip roll so that the top part of the warp shed is loose and the bottom part is tight will cause the loom to weave more of the warp yarn on the face of the fabric than on the back. You might try various whip-roll

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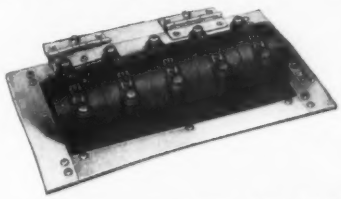

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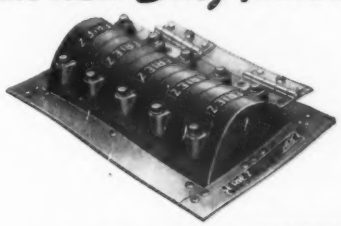

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Questions and Answers

(Continued)

heights to determine which adjustment gives the best effect.

Another possibility is to place a strip of wood across the breast beam between the temples to give an overbeating effect when weight is reduced It would be necessary to lower the shafts slightly.

It might be helpful to keep warp and filling tension to a minimum and to time the shed about $\frac{1}{8}$ in. after the beat-up. A later timing would be better, but it would increase the chances for yarn breaks and flying shuttles.

Build the chain to run all twill from left to right when viewed from the back of the loom. If some chains are built right to left and others left to right, have them changed so that they are uniform.

Loom-Model Designations Confuse One Reader

Technical Editor:

In your different issues we come across looms described as E, K, C-3, W-3, X, X-2, etc. What do these terms indicate? (9314)

There are two major loom-manufacturing companies in the United States: Draper Corp., Hopedale, Mass., and Crompton & Knowles Loom Works, Worcester, Mass.

Draper makes a high-speed automatic loom for weaving one-shuttle weaves for cotton, rayon, woolen, and worsted fabrics. Their older looms were known as E model. This model has been replaced by the X series.

XL is a broad sheeting loom that weaves 100-in. sheeting at about 120 picks per minute.

X-2 weaves 40 in. goods up to 225 p.p.m.

XD rayon loom weaves 42-in. goods up to 192 p.p.m.

XP is for wide heavy cottons.

XU is for medium-weight duck.

Crompton & Knowles manufactures a loom for virtually every known type of fabric. Quite frequently the name of the company itself is indicated by its initial C&K.

The C&K W-3 is a woolen or worsted loom made to run as an automatic 4x1 or a non-automatic 4x4. The 4x4 may be made so that it is convertible to run as a hand-fed or automatic loom.

The C&K S-6 is a 2x1 box automatic silk or rayon loom.

The C&K C-3, 4C-5, and C-6 are cotton looms designed to weave many types of cotton fabrics.

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Twitchell Oil 7240. A fatty-mineral base oil for medium soft hand is an efficient rewetting agent. Compounded to keep "fog" to a minimum.

For MINIMUM effect on Hand

Twitchell Oil 7231. All mineral base. Best where good wetting back, minimum effect on hand and greatest economy is sought. Compounded to keep "fog" to a minimum.

For REGULAR Finishing

Each of these three oils is recommended for regular finishing, for slashing, for increasing absorbency of towelling, wiping rags, paper maker's felts, etc. Twitchell 7210, 7211 and 7230 provide still lower cost oils for all types of cotton finishing where lower-quality, less-efficient assistants are adequate.

Our Sales Service Department is ready to schedule plant trials at your convenience.

OTHER EMERY PRODUCTS FOR TEXTILE PROCESSING

EMERSOL ELAINES

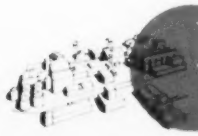
Current production of all Emery Oleic acids shows higher resistance to oxidation, better color stability, less tendency toward rancidity, greater odor stability, lowest unsaponifiable content of any commercial red oil.

EMERSOL STEARIC ACIDS

Manufactured to uniform quality standards . . . exceptional stability of odor and color (heat test) . . . unique qualities retained in most finished products.

ACIDS AND GLYCERIDES

Emery also manufactures: Animal, Cottonseed, Coconut, Soya Fatty Acids . . . Hydrogenated Acids and Glycerides.



EMERY INDUSTRIES, INC.

4300 CAREW TOWER · CINCINNATI 2, OHIO

Branch Office:
3002 Woolworth Bldg., New York 7, N.Y.
187 Perry St., Lowell, Mass.
401 N. Broad St., Philadelphia 8, Pa.

SEPTEMBER 1949

CARD CLOTHING NEWS and views

Written monthly by E. A. Snape, Jr., President **Benjamin Booth Company** Phila., Pa.

*STRIP-O-MATIC**

Answers this problem: Better Stripping At A Saving To You

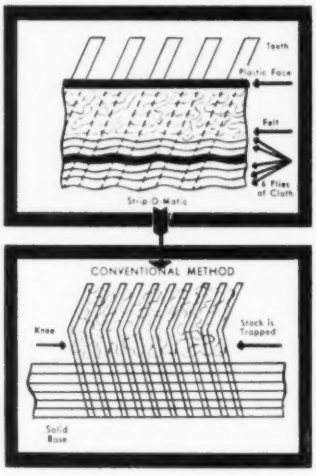
. . . And it **has** been a problem, this matter of better carding at a saving in time, labor and money. You were confronted with it so long, in fact, that it made plain "hoss" sense that we go all-out to design a card clothing whereby you would profit by its use. **STRIP-O-MATIC** is that clothing, and we are happy to say it caught on quickly, with a bang!

There is one important feature of **STRIP-O-MATIC** which I wish to mention at this point. That is, the design of the card clothing resulting in more carding below the surface. Conventional card clothing, you know, causes the Carding to be done more on the points of the wire. Then, because the teeth are so closely spaced, the stock tends to ride on the surface, subjecting the stock to a harsh, tearing action between the sharp points of the wire. The points must be sharp, or the stock would be rolled and not carded.

Contrast this to the specially-designed **STRIP-O-MATIC**, where the teeth are shorter, and open-spaced, to allow the stock to readily enter the space area between the wires. Here it is carded or pulled past the wires in a gentle manner. (It might be referred to as a combing action). And, just as the stock enters the wire area very readily in **STRIP-O-MATIC**, it raises just as readily when contacted by the Fancy, so that all stock is removed by doffing, with the result that the Cylinder runs clear.

It is well to note that, while there are fewer points per square inch in **STRIP-O-MATIC**, there are just as many or more points transversely, which, after all, are the points that count.

Many plants have reported to us their preference for **STRIP-O-MATIC**, which reduces stripping to a minimum. They find it is easy to use, requires no expert knowledge to install, and with the cut-down in stripping, the time goes to production.



Many of you have written for further information on **STRIP-O-MATIC**. We invite further inquiries, and our new 8-page color booklet on **STRIP-O-MATIC**, we feel, will answer any questions you have regarding long life, performance ability, cost, and savings.

We hope you will write for your copy today.

Thanks,

E. A. Snape Jr.

President,

Benjamin Booth Company

Allegheny & Janney Sts.

Philadelphia, Pa.

* Pat. applied for.

Card Clothing

(Continued from page 151)

ing does not suffer too much. Such a type of setting as is recommended when entangled wool or shoddy with many unopened threads is being carded. Such a setting also is used when the raw wool contains a lot of burrs, shives, leaves, and other kinds of impurities. If there is a third cylinder on a card, a 34/36 wire (a 34 wire in a 36 setting) may eliminate more neps and pills than would be possible if the setting were less dense.

FOUNDATIONS. The largest amount of card clothing used in the U. S. is made with the 4-ply flexifort foundation. Flexifort foundation consists of two cotton plies, a woolen ply, and a "patented" warp. The "patented" warp consists of linen cords inserted without any filling in order to help keep the foundation from stretching and to give it additional strength. Of course, flexifort can be made with any number of plies: the name flexifort is only used if a linen warp without filling yarn is used in the construction of the foundation.

In addition to flexifort, there is a felt-face foundation with either the regular or a heavy thickness of felt. Such a foundation will have five plies of cotton and one of linen. This type of foundation may be stitched or not, depending on the customer's desire. Usually, on the Continent, it is stitched.

Wool-face foundation is used principally for heavy-duty work in carding carpet wool or asbestos. It usually has 6, 7, or 8 plies, depending on how coarse the wire is and the need of the particular mill using it. Such a foundation is also made with the "patented" warp and can be stitched or not; generally, it is stitched.

There are many other foundations, such as that with a rubber face for use when the clothing is greatly exposed to dampness. The rubber protects the backing to prevent moisture from getting through.

There are also foundations with synthetic and plastic faces. The face has no bearing on the foundation; for instance, one can use a five-ply flexifort with a rubber or plastic face.

MAKE UP. Card clothing can be made up in ribbons (fillet) or in sheets. Usually all clothing is made in ribbons with exception of that for fancies; a small number of mills still use sheet clothing for this purpose.

Leather foundation is used in doffer rings, fancies, and lickerins or when diamond-point clothing is used.

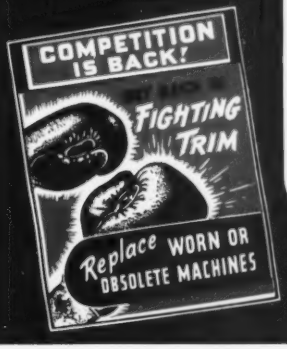
Felt face is more or less used

✓ *Prevents Snarling of Yarn*

✓ INCREASES PRODUCTION UP TO *50%*

✓

REDUCES DYEING COSTS *10 to 30%*



SMITH-DRUM SKEIN DYEING MACHINE

This is the machine that "moves the liquor instead of the yarn." As a result of this principle, first introduced by Smith, Drum & Company, there is no tangling of the skeins or breaking of the filaments. This means greatly improved back-winding with consequent saving in time and cost.

Because there are fewer knots in each skein, the fabrics made of Smith-Drum dyed yarn are of better quality. Savings in dyestuffs, steam, water and floor space result in a reduction in over-all dyeing costs that run as high as 10-30%. Even in large capacity machines, there is no tendency toward variation of shade due to variation of temperature because entire body of liquor moves from one end of machine to the other. Because it handles larger batches than any other machine occupying the same floor space . . . and because faster dyeing permits more batches per day . . . this machine increases production as much as 50% over other types of skein dyeing equipment. Catalog will be sent upon request.

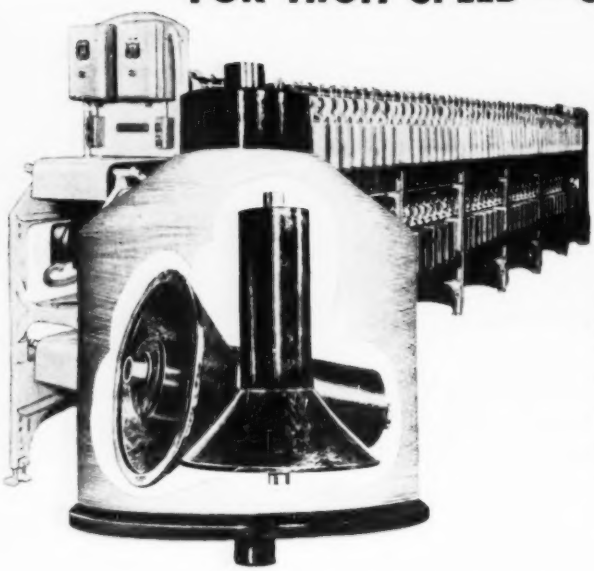
SMITH, DRUM & COMPANY

Allegheny Avenue at 5th Street, Philadelphia 33, Pa.

BRAND NEW!

THE Fletcher "KING SPOOL" Twister

FOR HIGH SPEED — OVEREND DELIVERY



ASSURES MORE PROFITS FOR THROWSTERS

You asked for it!

And Fletcher Engineered it!

After several years of exhaustive research, Fletcher has *the* solution to your problem . . . The "King-Spool" Twister provides bobbins for *high-speed over-end delivery, without sloughing off!*

Here is a *completely new* take-up package with many advantages designed to increase your production and profits . . . Investigate this amazing new Fletcher product TODAY!

10 REASONS WHY YOU'LL WANT THE *"KING-SPOOL"* TWISTER

1. "King-Spool" provides ALL the advantages of the headless take-up package and eliminates the disadvantages of both headless and regular double-headed take-up bobbins.
2. "King-Spool" is more versatile! Spins from either regular bobbin or pirn. High as well as low twist yarns are handled with equally high efficiency.
3. "King-Spool" uses Overend Delivery — No Sloughing Off!
4. "King-Spool" provides for "tail" used in magazining.
5. "King-Spool" permits easier, more thorough steaming.
6. Fast Traverse! Yarn doesn't lap over or fly off open end. Underwinds impossible.
7. Automatic Bobbin Lifter! If end breaks or bobbin is full, the "King-Spool" automatically lifts from cork roll.
8. "Oilwell" Spindles—a year's supply of cool, clean oil—better lubrication at less cost.
9. "King-Spools" can be had with either molded plastic or expendable paper bases. Available in several sizes.
10. The "King-Spool" Twister is the newest product of Fletcher Works, builders of fine textile machinery since 1850.

This New Twister is also Available for Production of Headless Packages

FLETCHER WORKS

223 GLENWOOD AVE. PHILADELPHIA 40, PA. ESTABLISHED 1850

Insolvencies mount as deflationary wave forces drastic price cuts along lower Broadway.
THE ISELIN DIARY, 1857

THE BETTMANN ARCHIVE

Trial by panic

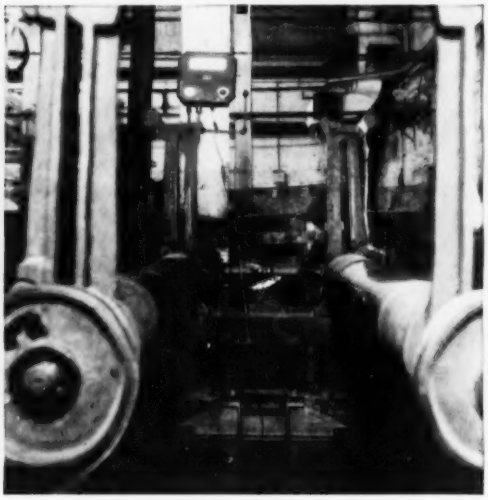
In 1857, many a manufacturer was better able to weather the storm of deflation because of Iselin's 49-year-old financial and credit service . . . Tested by panic, perfected through 141 years of business experience, Iselin's Factoring service today assures greater financial flexibility and stability—provides protection against credit risks and losses . . . The prosperity of our clients is evidence of the soundness of our methods—methods you may follow for profit and security. Send for booklet on our Factoring service to industry.

William Iselin & Co., Inc.

357 Fourth Avenue, New York 10, N. Y.
FOUNDED IN 1808

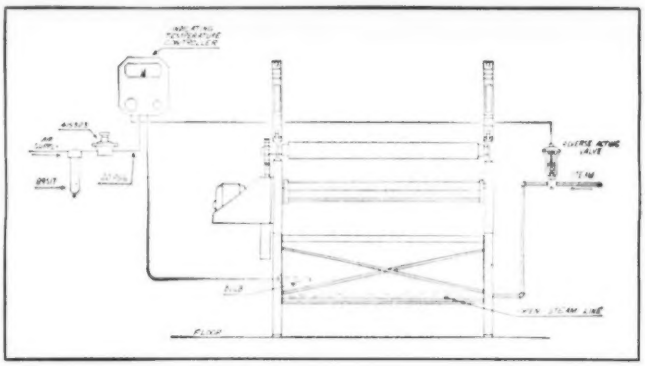
Can you afford not to have Taylor AUTOMATIC DYE JIG CONTROL?

Recommended range 50° to 220°F.



NOTHING but the best in uniform shades is good enough for today's highly competitive market. If there ever was a time to be *certain* your shades go out perfectly matched, it's right now. One of the best ways to cut dye jig operating costs and increase production *and* efficiency is to do away with hand operation and install automatic control. And you can find none better than Taylor Automatic Dye Jig Control for:

1. Uniform dyeing by automatically maintaining uniform dye liquor temperature—*regardless of wide variations in steam pressure in the header.*



Big scale for easy long-distance temperature readings.

2. Big steam savings through automatic throttling control. You'll maintain an even temperature with no over-peaking—*such as you get with on-and-off control.*

This comparatively inexpensive Taylor Automatic Dye Jig Control system consists simply of (a) A Taylor 86R Fulscope* Indicating Temperature Controller and (b) A correctly sized Taylor Diaphragm Valve.

Here are a few features that make the 86R Fulscope your best buy for this vital type of control:

A sturdy dependable instrument for this job.
Simple, economical, air-operated.
Temperature easily adjusted by outside set knob and pointer.
All-welded, highly polished stainless steel bulb.

The Taylor Diaphragm Valve is made of rugged cast iron—every inch of it built for years of dye house service. This all adds up to keeping dye jig operating efficiency and product quality at a constant peak—and costs at a minimum. We'd like to show you what Taylor Automatic Dye Jig Control can do for your business. Once we do, we believe you'll agree that you can't afford *not* to have it. Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

* Registered Trade-Mark

The Same Old Crutch?

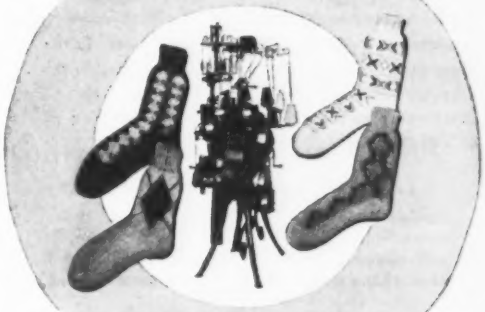
If you're limping along in today's hosiery market without Banner Wraps . . . if you're relying on a standard line to see you through . . . then, Mr. Hosiery Maker this is for you!

The practically unlimited VERSATILITY of Hemphill Banner Wrap-Reverse Machines can help you throw that crutch away and stand on your own two feet in today's slugfest of competition.

To name but one example of Hemphill VERSATILITY: the Hemphill Boys' Machine makes boys' socks in perfect pattern proportion to Men's Banner Wraps . . . in all styles, patterns, colors and with Banner-Lastic Tops.

Find out exactly how Hemphill versatility can work for *you* . . . find out from a Hemphill sales engineer. Ask to have one call soon! Address Dept. – today!

Step Out in Competition – with Banner Wraps!



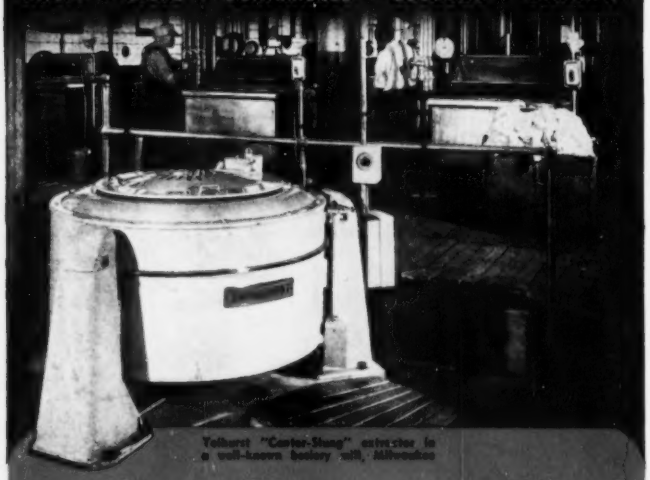
THE HEMPHILL COMPANY
PAWTUCKET, RHODE ISLAND, U. S. A.

Makers of Banner Hosiery Machines

OFFICES: Empire State Bldg., New York 1, N. Y. — Security Bank Building, High Point, N. C.
EXPORT OFFICE: 25 Beaver St., New York 4, N. Y.

Your ONLY Performance Insurance — Genuine Hemphill Repair Parts

SAFETY • SPEED • CONVENIENCE • ECONOMY • DURABILITY



Tolhurst "Center-Slung" extractor in a well-known factory mill, Milwaukee

TOLHURST "CENTER-SLUNG" EXTRACTORS

Especially Designed for Textile Mills

IN MODERN, progressive textile mills, where efficiency is the watchword, Tolhurst "Center-Slung" extractors have been acclaimed favorites for years. These sturdily constructed extractors provide high productivity at low cost, combining speed with economy in handling large loads. Tolhurst "Center-Slung" extractors run smoothly even with unbalanced loads, because baskets are free to find their own center of gyration. 40", 48", 60", 72" and 96" basket sizes. For smaller loads, Tolhurst extractors are also available in 20" and 30" diameters. Other Center-Slung features include stainless steel basket, automatic safety cover, and "V" belt motor drive.

Improved AUTOMATIC TIMER CONTROL

Makes operation automatic from the time "start" button is pushed to the moment the brake stops the finished load, after predetermined cycle. Standard equipment on 40" and 48" Center-Slung extractors and available at small additional cost on 60" and 72" Center-Slungs.

LABORATORY SERVICE AVAILABLE

Consult Tolhurst on all extractor problems. Tolhurst maintains a complete staff of experienced engineers with modern research facilities. Write for illustrated catalogs and prices on these Tolhurst textile extractors.

TOLHURST CENTRIFUGALS

Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS
In Canada: American Machine and Metals (Canada) Ltd.
215 St. James Street West, Montreal 1, P. Q.

throughout Continental mills. Carders often feel that a felt face promotes better bending of the wire and resists much more the strain of carding of wool and shoddy. A wool face serves a purpose similar to the felt face. The wool face is much thinner, but also supports the clothing wire at the base; at the same time it allows the wire to bend more freely than is the case with a felt-face foundation. Wool face is often used in carpet work, since the strong wools produce a heavy strain on the wire and foundation.

WIRE. Wire staples are made from hardened and tempered steel wire. Hardened-point clothing has hard points to resist wear and tear and does not need as much grinding as does normal wire. Hardened-point wire is used principally in carding coarse and medium stock; for fine wools, hardened points are not recommended.

Some other kinds of wire, not too well known to carders, are used in some mills. The so-called "tinned wire" is rust-resisting and is used when excessive moisture is present. Such wire is usually combined with a rubber-faced clothing. Bronze wire is used where very wet material is handled.

Basically, carding all over the world is the same; only the numbering system is different. By using a comparison table, one will find out that most carders are using similar card wire.

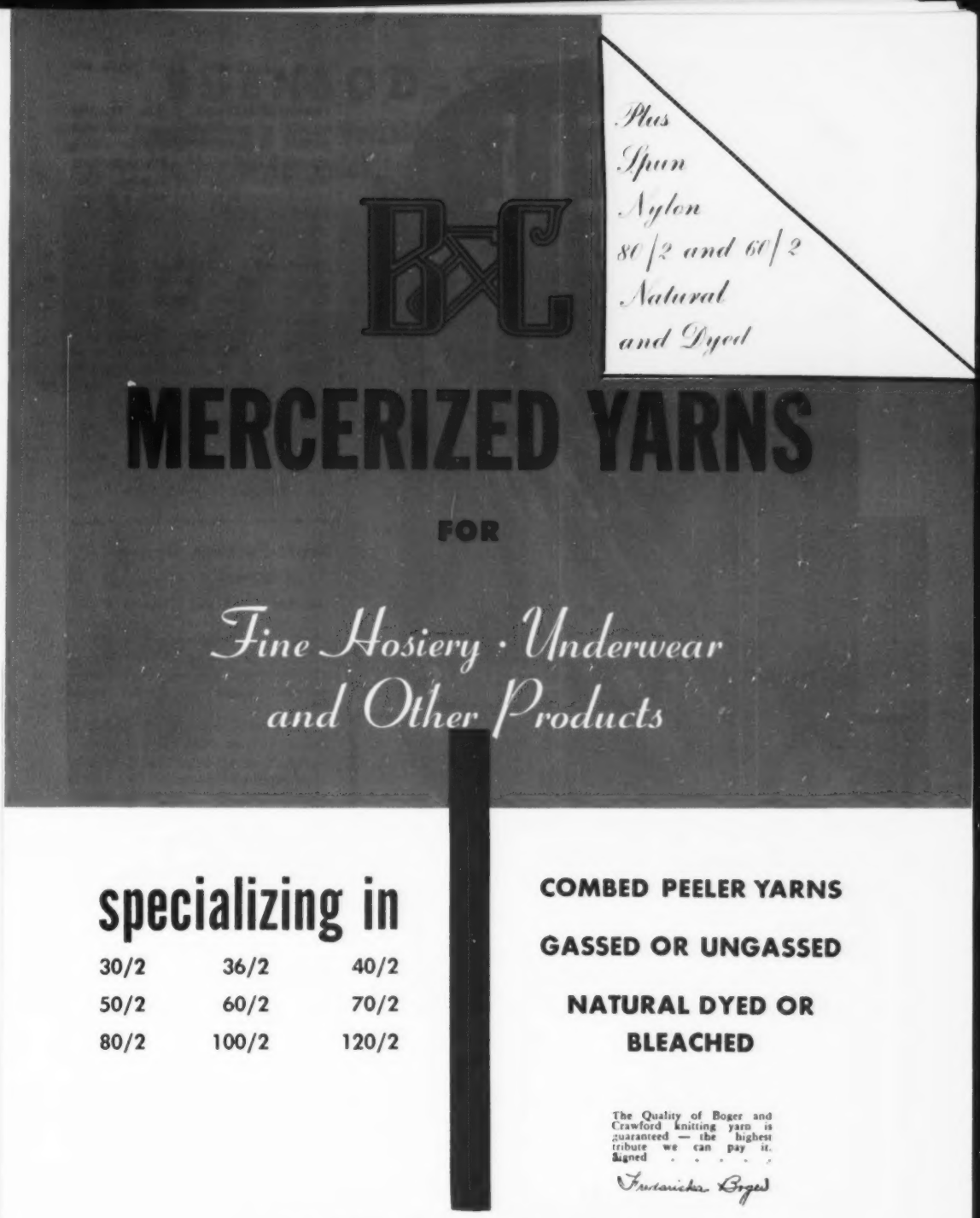
The kind of foundation and face used is a matter of opinion between flexifort or felt, inasmuch as both have shown good points in obtaining a satisfactory roving.

Printing on Vinyl Film

(*Continued from page 143*)

and separate screens for each color, of course, are necessary. The design is placed over silk or nylon screens, which have been coated with light sensitized gelatin. The whole device is then exposed to light, rendering the portions of the exposed film insoluble. When the screen is washed, the unexposed portions of the film are washed away in the process. This leaves the screen open in a reproduction of the design. The screen is then dried and ready for use on vinyl films.

In the printing operations, the screen is placed on the film. The color is forced through the design by a squeegee or air crush, and the operation repeated until the print is complete. The entire process is done by hand, and as a result the cost of the prints is higher than for those produced by the roller method. The same inks, adjusted for different drying times, are used in this process


B&C
Plus
Spun
Nylon
80/2 and 60/2
Natural
and Dyed
MERCERIZED YARNS
FOR
Fine Hosiery · Underwear
and Other Products
specializing in
30/2 36/2 40/2
50/2 60/2 70/2
80/2 100/2 120/2
COMBED PEELER YARNS
GASSED OR UNGASSED
NATURAL DYED OR
BLEACHED
The Quality of Boger and Crawford knitting yarn is guaranteed — the highest tribute we can pay it.
Signed . . . . . ,
Frederick Boger
BOGER and CRAWFORD
"J" and EAST VENANGO STS., PHILADELPHIA 34, PENNA., U. S. A.
SPINNING MILLS—BOGER CITY, N. C.
BRANCH OFFICES—BOSTON, MASS., UTICA, N. Y., CLEVELAND, OHIO

LOWELL

SHUTTLES

DOGWOOD OR PERSIMMON— FIBRE COVERED OR PLAIN

BOBBINS

MAPLE, BIRCH OR BEECH

A HALF CENTURY OF EXPERIENCE

Experience is the best teacher and this company has had half a century of it in manufacturing shuttles and bobbins for all fibres.

All wood for Lowell Products is well seasoned and kiln dried. Every operation is performed in our own shop to control quality and speed up deliveries. Any desired finish can be furnished. May we hear from you?

LOWELL SHUTTLE COMPANY

Established in 1896

15 TANNER STREET · · LOWELL, MASS., U.S.A.

as in the others. Final prints are air-dried.

TRANSFER METHOD. The transfer method of printing is a very different process. A special type of paper which accepts a coating of a thermosetting resin of the alkyd type is used. This coated paper is printed with a design, using special inks, which will separate from the paper in the next operation. The paper is then used as an apron, and a solution of vinyl resin is spread onto it. As the film dries, the print becomes part of it; and the dried film has the design. The coated paper may be reused. The design may be more detailed in this method of printing, since the original pattern is on a non-stretching material. Many cast films are inherently tacky and cannot be printed by the roller method. The transfer prints do not block any more than the film alone would. This method is, again, more expensive than the roller method.

Small-Package Dyeing

(*Continued from page 107*)

ages are placed on shelves in a cabinet and hot air is blown around them. This process usually takes 12 to 24 hr., depending on temperature. At times trouble is encountered with migrated colors and harsh, brittle yarns.

The port-blower type of drying is linked with air extraction. The yarn carrier, after air extraction, is placed on an open port connected to a heater and blower, and hot air is blown through the packages from the inside out.

Advantages of this method are that the drying air can be filtered, the process is faster than the oven, and labor is almost negligible. Disadvantages are that the horsepower consumption is high and the tie-up of dyeing-machine carriers requires an investment of approximately five package carriers per dyeing machine, compared to two when mechanical methods of extraction and drying are used.

LATEST-TYPE DRYER. The newest type of package dryer combines both principles. Hot air is blown through the packages from the inside to the outside, and then the air is reheated and passed over the outside of the packages before it is exhausted. This method results in a double drying action that speeds up drying considerably and reduces drying costs.

In general, it is necessary for the purchaser of package extracting and drying equipment to balance the advantages and disadvantages of the available systems. The air-extraction

BUENSOD-STACEY, INC.

Announces a New Portable Electric Humidity and Temperature Indicator for quick testing of Humidity and Temperature

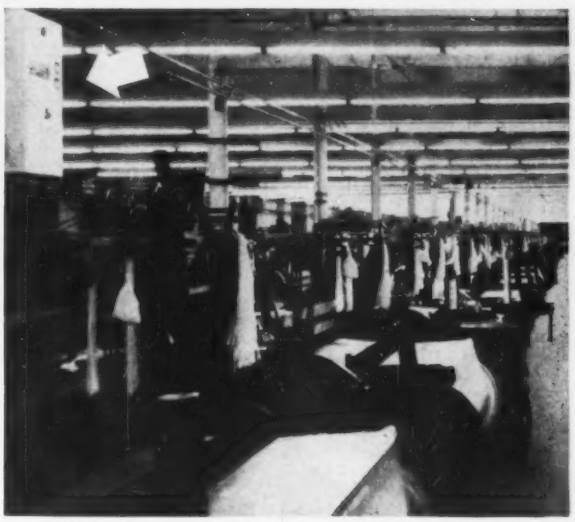
The Buensod-Stacey Portable Electric Humidity and Temperature Indicator was developed to meet the demand for quickly taking direct readings at any point in the mill of percentage of relative humidity and temperature in degrees Fahrenheit. Price $250 U.S.A. plus transportation and sales taxes.

Available immediately.

PATENT PENDING

THE BUENSOD-STACEY ADJUSTABLE INTERMITTENT HUMIDITY CONTROLLER insures extremely close control of relative humidity without the objectionable atomizer-head "wet-down" that is sometimes encountered. This "wet-down" is eliminated by the adjustable and intermittent features of the CONTROLLER which regulates the cycle of atomizer-head operation without interfering with their use in obtaining the desired relative humidity conditions. The adjustment extends through a wide range and is therefore suitable for a variety of applications.

CONTROLLED HUMIDITY WEAVE ROOM



A view showing the Buensod-Stacey Adjustable Intermittent Humidity Controller in the #6 Weave Room of the Hathaway Manufacturing Co., New Bedford, Mass. which room has 8 Controllers in operation.

P. L. Davidson & Associates, Textile Consulting Engineers, Buensod-Stacey, Inc., Installing Engineers.

BUENSOD-STACEY, INC.

ENGINEERING CONTRACTORS

Specialists in Textile Humidifying and Air Conditioning

Main Office: 60 EAST 42nd ST., NEW YORK 17, N.Y.

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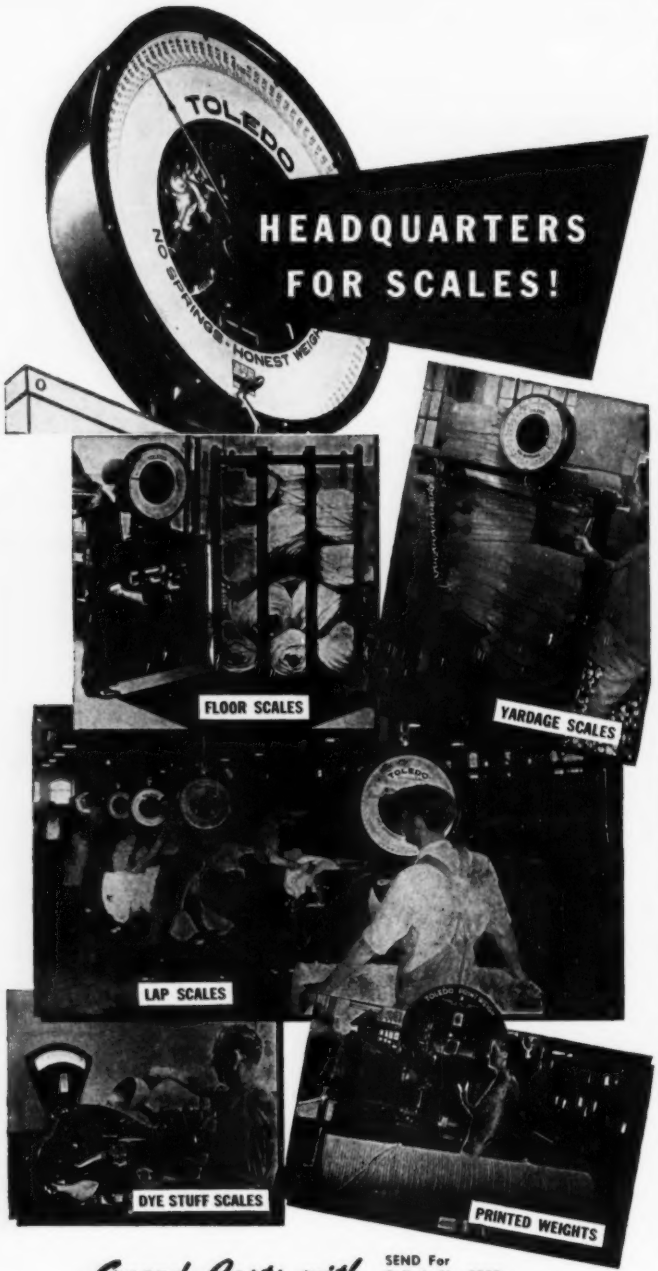


Guard Costs with SEND For Bulletin No. 2020. Toledo Scale Co. Toledo 12, Ohio

TOLEDO

All the Way!

and blower-drying system offers labor saving but at the cost of high horsepower load and increased investment in dyeing-machine carriers. The mechanical system requires more labor but operates with less power and requires a lower investment. Factors influencing the choice, of course, are power rates, prevailing labor rates, the availability of capital, and quality requirements.

AUXILIARY EQUIPMENT. Most auxiliary equipment in a package processing plant is the same as for any other dyehouse, except for hoists and a few other specialized pieces of equipment.

An efficient hoist is a great asset to a package dyehouse. If the plant is small and has sufficient headroom and ample floor space, it is possible to use an inexpensive monorail hoist. If the plant is extensive, a crane-type hoist is the most efficient. In either case, it is necessary that the hoist be fitted with an offset, rigid arm for moving the load of yarn on the dye carriers into and out of the dyeing machines, or other equipment, without the load being contacted by any chain or other part of the hoist. Power travel-hoists are usually not necessary in a dyehouse, although they are efficient.

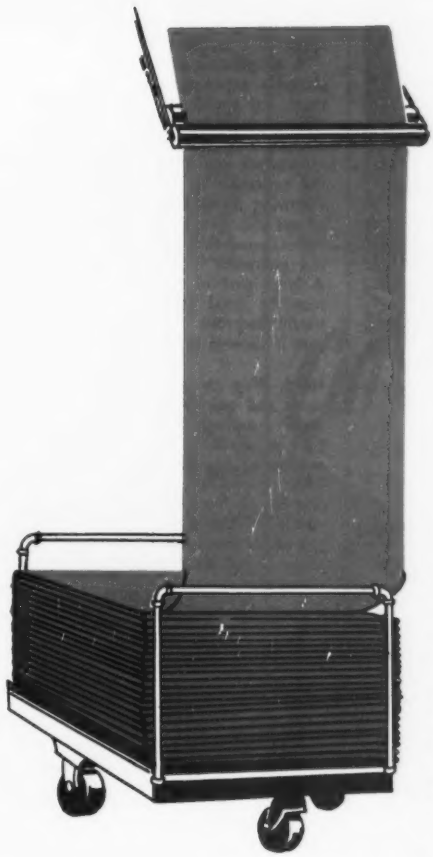
Fixed-tension air wrenches are widely used for putting on and removing nuts from the spindles. The use of this apparatus reduces the danger of nuts being put on too tight, with the consequent twisting of spindles, and saves considerable labor. It also allows hot carriers to be handled quickly.

Card Setting

(*Continued from page 161*)

a tension between doffer comb and large calender roll can be blamed for a large part of a mill's weak yarn. A broken web selvage means a thin place in the card sliver, and all the subsequent doubling and drafting will not entirely correct it. To reduce web tension, lower the swing of the doffer comb. The coiler trumpet should be of the correct size to condense the sliver properly and to prevent stretching in the subsequent drawing process.

Settings of the front and back plates control the action of the flats and the amount of strippings. Individual strips from a number of flats should be weighed to detect those that are excessive. Cards delivering a 52-grain sliver with a production of 10 lb. per hr. will normally give strips varying from 18 to 23 grains



SANTOMERSE No. 1

Monsanto's versatile detergent and wetting agent for high-speed, continuous dyeing

Santomerse No. 1 gives you the detergency and penetration you need for efficiency in your high-speed, continuous dyeing operations. It makes important contributions to level dyeing and non-crocking.

Santomerse No. 1 serves in the reducing, oxidizing and scouring operations in the continuous range. In the various units, Santomerse No. 1 proves exceptionally efficient because it is effective in acid, neutral or alkaline solutions . . . because it penetrates thoroughly . . . because it lifts out particles and holds them in suspension for easy rinsing.

For further information on Santomerse No. 1, or other Monsanto detergents and wetting agents, mail the coupon, contact the nearest Monsanto Sales Office or write: MONSANTO CHEMICAL COMPANY, Desk J, Phosphate Division, 1780 South Second Street, St. Louis 4, Missouri.

MONSANTO SYNTHETIC DETERGENTS AND WETTING AGENTS

Santomerse* No. 1
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Santomerse No. 3 (Paste)
Santomerse 30X
Santomerse D
Santomerse S
Sterox* CD
Sterox SE
Sterox SK
Sterox 5
Sterox 6

**Reg. U. S. Pat. Off.*

Sterox No. 6, one of Monsanto's liquid nonionic synthetic detergents, can be used successfully in preparing goods for the pad box. Sterox is dried into the fabric before it gets to the pad, resulting in quick, even dye penetration.

Synergistic Action Steps Up Detergency and Lowers Costs

Monsanto Tetra Sodium Pyrophosphate, used with either Santomerse No. 1 or Sterox No. 6, creates synergism which increases detergency and lowers costs. Synergistic action is the result of two products working together to give detergency greater than the average of the two used alone . . . greater than the detergency of either. It is more economical because of this extra cleaning power and because TSPP is lower in price than either economical Santomerse or Sterox.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

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Desk J, Phosphate Division
1780 South Second Street, St. Louis 4, Missouri
Please send items checked: Data and quotations on ___Santomerse No. 1; ___Sterox No. 6; ___TSPP.

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Company_____

Street_____

City_____ Zone_____ State_____

SERVING INDUSTRY . . . WHICH SERVES MANKIND

for Softness . . .
plus **BODY**

WHEN you want softness plus body in any textile, investigate STEARO GLYCERYL SULFATE N. It provides notable improvements in softening and plasticizing effects, and at the same time can give you body and/or thickness over a wide range due to its superior penetrating ability.

More readily soluble and more stable because of its higher SO_3 content, Stearo Glyceryl Sulfate N is also more resistant to hard water and electrolytes than conventional soaps and sulfonated tallows. It insures much greater resistance to yellowing and rancidity. It can be used with many other finishes to get a considerable variety of hands.

No changes in process or equipment are involved in using Stearo Glyceryl Sulfate N, and it is much more economical in use than ordinary sulfonated tallows.

Write for Onyx Technical Data Sheet 12-T *for data on Stearo Glyceryl Sulfate N and its use for softening; warp size lubrication; plasticizing starch; as a protective agent against alkali damage, etc.*

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onyx **CHEMICALS FOR TEXTILE PROCESSING**

each on middling cotton at a flat speed of 3 in. per min.

A progressive carder will do considerable experimenting on plate settings, flat speeds, and flat-to-cylinder settings in order to obtain the best possible setting for his particular line of product and class of cotton. It is not necessary to be too orthodox in following standard settings or speeds to get the best results. It must be remembered that a heavier strip does not guarantee a better-quality sliver. A large part of the increased strips may be good spinnable fiber that would improve the quality of the yarn if allowed to remain in the sliver.

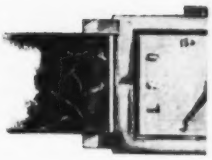
NEPS. Nep count is a simple test, easily and quickly made, that will remove guesswork from the consideration of sliver purity. A method of comparing the number of neps or other impurities in the lap to the amount in the web will tell the efficiency of the card in nep removal, and show the need for changing settings or speeds to obtain increased cleanliness.

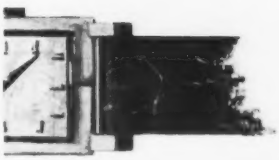
A short-cut method of sampling neps can be applied to cards to eliminate the need for weighing the specimen. The method gives fairly precise comparative results, and is performed by placing a 9x4-in. blacknapped mat under the center of the web as it leaves the doffer comb (with doffer stopped). A piece of glass is placed directly on the web to hold it on the mat. When the inclosed web is lifted out, it is ready for counting without further preparation. When the sliver weight is constant, the weight per unit area will vary only slightly; thus the counts of different cards will be comparable. A pick glass may be used to magnify the specimen and to facilitate the counting.

Ruled forms for recording the nep counts can be made, and the truth or falsity of the following statements can be determined for each type of stock:

1. Increasing the speed of flats is more economical for improving quality of sliver than reducing the speed of doffer.
2. Front-plate settings may be made to increase flat strips without showing any improvement in quality of sliver.
3. Improper doffer-to-cylinder settings are the most frequent cause of neppy, cloudy webs.
4. The present stripping period of four hours should be shortened to improve quality.

Fiber-array analysis of specimens of card-strip waste will give valuable information on the best settings and





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CUTS DRYING TIME IN HALF!

. . . AND COSTS, TOO.

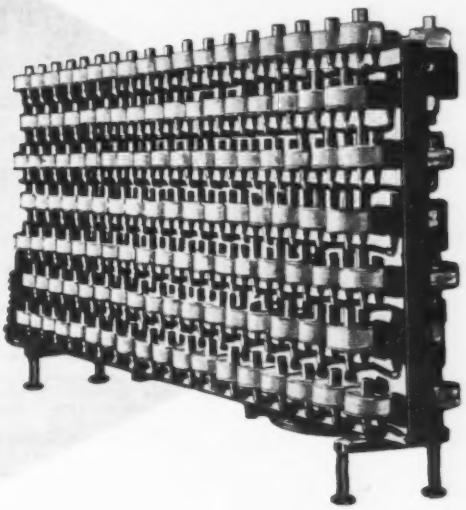
TRADE MARK

Stienen

RAYON CAKE DRYER

Time saver
Space saver
Money saver

That's the exceptionally efficient Stienen Rayon Cake Dryer, made by the leaders in the field – Standard Fabricators, Inc. Yes, it takes the entirely new Stienen Rayon Cake Dryer a fraction of the time –6 to 9 hours–to dry Rayon cakes as compared to others which take much longer. Result – faster turnover of yarn. Less space is required, and that means more production per area. Maintaining the original quality of the yarn, the Stienen Rayon Cake Dryer performs with the greatest of ease in loading and unloading –no cumbersome racks to pull out–push around. Write for further information.



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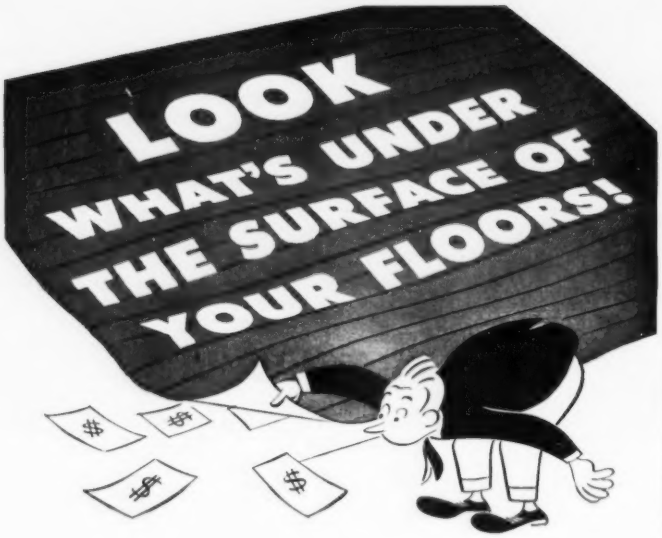

DOLLARS SCRUBBED
RIGHT INTO THE WOOD!

You'd be dismayed, too, if you could see how *much* scrubbing really costs! More man-hours for maintenance . . . more accidents due to wet, slippery floors . . . more expense for floor repairs . . . more time lost waiting for floors to dry, etc.

That's why hundreds of mills have abolished scrubbing — for the modern TENNANT System.

SAVE LABOR, CUT COSTS, BY "DRY-CLEANING"

RECONDITIONS your floors. Fast, easy-to-use Tennant machine brings your floors to life again! Gets rid of dark, rough, oil-soaked fibers . . . leaves floor bright.

HARDENS surface to resist wear. Special sealing process fills, binds and hardens wood fibers. Makes your floor resist dirt penetration . . . prolongs floor life.

DRY CLEANS, eliminates scrubbing. A fast, one-man job . . . with no mess or bother. Keeps floor lustrous, DRY, non-slippery. Enthusiastically approved by hundreds of mills. Saves man-hours, assures fine floors.

WRITE TODAY! Ask for illustrated bulletin describing this NEW MODERN WAY TO MAINTAIN TEXTILE FLOORS.

Where Mill Floors Gleam Mill Profits Grow

The way to finer floors
TENNANT
Floor Maintenance System

G. H. TENNANT CO.
2386 North 2nd Street
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speeds for good quality sliver without excessive loss of good fiber. Three percent of flat strips is not excessive if a large part of this is trash. Its removal will certainly improve the quality of the delivered sliver. But, many specimens of flat strips contain as high as 75% of good spinnable fiber, of a length often almost equal to the classified length of the cotton used. This excessive amount of good fiber in the strips can be reduced, in many cases, by suitable card adjustments without any loss of sliver quality and with a great saving in waste.

Reading Test Values

(*Continued from page* 153)

average and those that are lower. When the observation is greater than the average, the difference is entered as a positive figure. When it is lower, the difference is entered as a negative figure. When the column figures are tallied for the entire test, the sum of all the figures becomes the **total deviation.**

Later on, it will be necessary to find the standard deviation; and for this reason a third column, d^2, is added. Each of these figures is the square of the deviations as shown in the second column.

The **average deviation** shown in the test summary is the total deviation divided by the number of observations. This value must be stated as "the average deviation *from* **the mean.**"

The **average deviation of the mean** is the total deviation divided by the square root of the number of observations.

Precision also applies as a statistical factor in the summary of the test. It states percentagewise with what precision the "average deviation of the mean" has been measured.

Percent irregularity is an expression of the relation between the average deviation of all observations (average deviation from the mean) and the average of all observations.

Standard deviation is a statistical term derived from the sum of the squares of the individual deviations as

TABLE II

	Test No. 1	Test No. 2
Minimum Observation	59	60
Deviation from mean	3.1	3.1
Percent deviation	5.0	4.9

Confidence

that endures must be deserved

With us, it is a vital living part of our business. Year in and year out, for the past 56, customers everywhere have come to us again and again to process their silk, nylon and rayon yarns . . . confident that the Heineman way, Heineman methods and Heineman service mean superior workmanship. Whatever it is in processing for the hosiery and knitting trades, we will welcome your inquiry

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All-Metal Thermometers
Rugged, all-metal construction . . . stainless steel stems . . . bold, readable dials . . . accuracy within 1% over the entire scale—all add up to the answer to industry's toughest temperature measurement requirements. Choose a dependable WESTON thermometer from a variety of types, stem lengths and scale ranges. Call your jobber, your WESTON representative, or write for Thermometer Bulletin . . . WESTON Electrical Instrument Corporation, 690 Frelinghuysen Avenue, Newark 5, New Jersey.
CONTACT MAKING models for alarm or control purposes.
MAX-MIN models to indicate highest or lowest temperature reached.
WESTON Instruments

shown in column 3. It is calculated to show the dispersion of observation values about the mean value; or in plain language, to spot the scatter of values around the mean which is the standard. It is preferred to other related terms because technicians believe it defines dispersion more accurately. Seven is used as the divisor instead of eight.

Coefficient of variation is a term for mere convenience, practically speaking. It is widely used as a term for comparing variations. It is derived from the ratio of the standard deviation to the average of all observations.

VARIATION RANGE. Practical mill men rightfully insist that the range of variation is the most important factor in comparing the value of tests for use in mill operation. The range of variation is usually ignored in simple statistical analysis. But no knowledge of higher mathematics is required to prove that a few low breaks in either of the two tests shown in Table I would offset all the benefits of low-average deviation or other favorable factors. Minimum or low values cause grief in spinning and weaving. They should not be ignored by the laboratory.

For this reason, there should be a supplement to the usual information required from test reports. This supplement may be called "an Index to Low or Minimum Observations" for determination of the actual processing value of the specimens. Such a supplement for the two tests in Table I is outlined in Table II.

Pointers for Supervisors

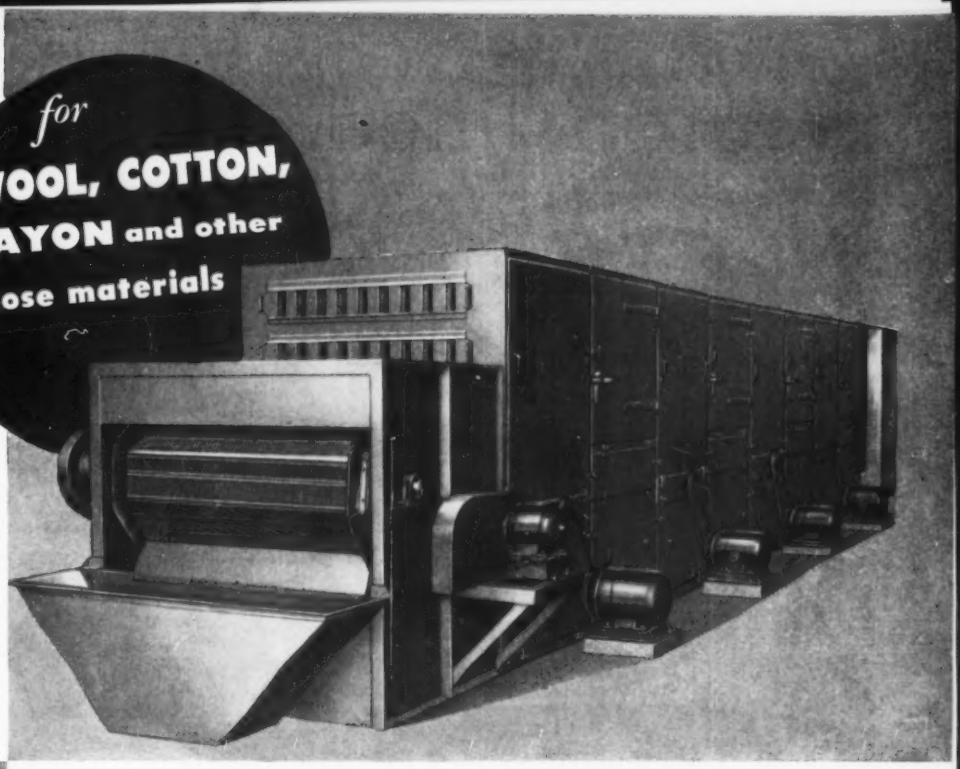
(Continued from page 165)

are in a constant dither, or given to undue wise-cracking, you will not inspire the confidence of men around you whose fears, uncertainties, distrust, or emotional stress might be greatly lessened by talking to a sympathetic listener.

The cold, discourteous, or frustrated overseer is not the only type who violates the simplest rules of good listening. Even if considered a "prince of a fellow," you may unconsciously render yourself ineffective as a listener by doodling, making out your time sheet, playing with a ruler on your desk, or scratching your nose or ear while an employee talks or asks a question. Or, you may grab the conversational ball from an employee who reports a bright saying of his youngster by simply reporting a brighter saying of your own child or grandchild!

Perhaps the most serious mistake you can make is to reveal things told you in a private conversation. An

for
WOOL, COTTON, RAYON and other loose materials



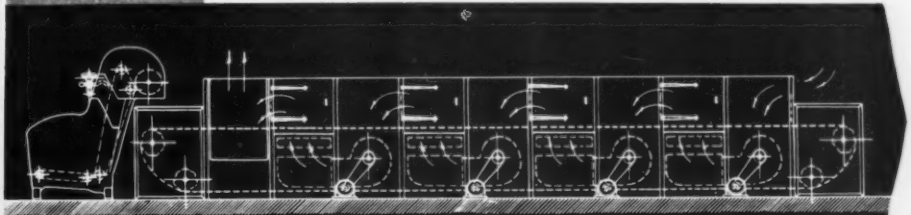
SARGENT'S *CONTRA-FLOW* Single Apron Dryer

Sargent presents a NEW, fast, automatic, single apron dryer employing the counter-air-flow heating principle. This system provides the most rapid and economical textile drying ever developed for wool, cotton, rayon and other synthetic and loose materials.

The material to be dried and the air which dries it *enter* the dryer at *opposite ends*, and *travel* through in *opposite directions*. The fresh air enters the dryer at room temperature at the delivery end. Passing upward then downward through the material, the air is constantly reheated and gains in temperature and moisture content as it travels toward the feed end. Wet material traveling through the dryer is subjected first to hot, wet air, then progressively to drier, cooler air. In the final stage, cool room temperature air passes through the hot, dry material and is thus delivered from the dryer in perfect condition and *without carrying away heat*. For complete information please write for Bulletin No. 183.

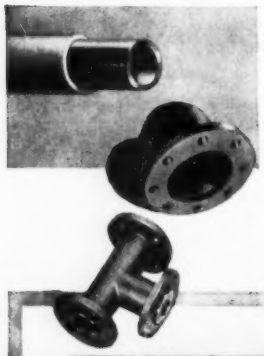
C. G. SARGENT'S SONS CORPORATION

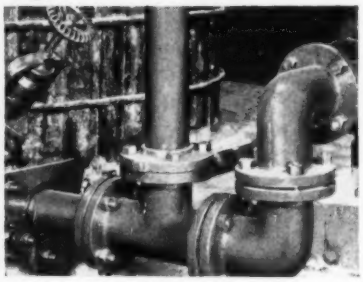
Graniteville, Massachusetts, U. S. A.



Schematic diagram of the SARGENT CONTRA-FLOW SINGLE APRON DRYER showing direction of travel of air through fans and heating elements. Material travels in opposite direction.

saran lined steel pipe





resists corrosion

- reduces shut-downs and lost production!
- saves time and labor!
- readily field-fabricated!

The conveyance of corrosive liquids can prove as hard on profits as it is on equipment. Saran Lined Steel Pipe is designed and constructed to protect YOUR profits. It combines the desirable features of steel pipe—rigidity and pressure strength—with Saran's unusual resistance to most corrosive chemicals, solvents, and erosion. Another advantage is ease of field fabrication. For general service, Saran Lined Steel Pipe can be used at temperatures between —40° and 190°F.

Saran Lined Steel Pipe comes in maximum lengths of 10 feet and in sizes from 1 to 4 inches. Plug valves and fittings, also Saran Lined, include elbows, tees, companion and reducing flanges, and gaskets. AVAILABLE IMMEDIATELY. Write us today for further information concerning Saran Lined Steel Pipe and how it can solve your problem. Manufactured by The Dow Chemical Company, distributed nationally by Saran Lined Pipe Company.

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employee may confess a personal experience that you can relate and bring laughs at your home or among friends. Even told without names, such reports have ways of circulating back to department employees. An innocent remark may thus give you a "kiss-and-tell" reputation, which will quickly pull your listening rating down to zero.

These mistakes in listening do not mean the breakdown in your efficiency along other lines. But they do represent fumbling of opportunities for building effective human relationships. An employee denied sympathetic hearing of a problem pressing enough to make him want to reveal it, or robbed of sharing his pride or triumph by a listener who himself reveals reason for greater pride or triumph may be an employee whose value is permanently reduced for you or the company.

On the other hand, the employee who has been listened to and understood when he needed understanding may have the incentive to come through with a first-rate performance when other incentives are not effective. The worker who has been appreciated for a good performance, or for himself, in an emergency, may deliver a better performance in a greater emergency. And the employee who has made even serious mistakes may avoid future mistakes because he learned of his error and weakness and gained strength through sympathetic and directed listening.

QUESTIONS. Supplementing the listening attitude—composed of interest, relaxed friendliness, sincerity—you must learn the judicious use of when-where-who-what-why-how questions. These help the talking out of a problem, which serves to relieve tension or worry, and often uncovers recources for problem-solving that the speaker did not realize he possessed. Questions that can be answered with a "yes" or "no" usually serve only to confirm the original feeling of the employee.

If the employee makes vague statements or blanket generalizations which reflect strong feelings, you might ask him to clarify his statements by a definite example or a recent experience. Thus he may be directed to uncover for himself reasons for pride where he thought there was only discouragement; security where he had recognized only insecurity; strength of which he can be proud when he had been thinking too much of weakness of which he was ashamed. In this way valuable perspective is achieved, "blind spots" illuminated, "sore spots" relieved.

You can use praise and expressions

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ALEXANDER CITY, ALABAMA April 2, 1949.

Joe W. Richardson, General Manager, Bleachery Division, Russell Manufacturing Co.

View of the Russell Manufacturing Co. mill at Alexander City, Ala.

"Greater Speed and Economy in Bleaching Cotton Piece Goods and Colored Yarn Fabrics . . . with our DU PONT CONTINUOUS PEROXIDE BLEACH SYSTEM"

SAYS JOE W. RICHARDSON, General Mgr. of Russell's Bleachery Division: "We are manufacturers, finishers, and job finishers of colored yarn dress fabrics, colored yarn broadcloths, and plain fabrics in the dress goods and broadcloth weights. We have been bleaching these fabrics on our Du Pont bleaching range and are obtaining regularly a more uniform bleach with greater speed and economies resulting from chemical savings on colored yarn fabrics, reduced labor costs and fewer seconds. We are successfully bleaching plain light-weight fabrics preparatory for dyeing with this system."

These words are typical of what executives are saying in the many leading bleacheries using Du Pont systems. And more and more mills are changing to Du Pont Continuous Peroxide Bleaching Systems . . . finding them easy to set up, operate and control. They're backed by the years of experience and "know how" of Du Pont Technical Service.

TO BLEACH MORE GOODS FASTER AT LOWER COST

There's a Du Pont System to meet your specific requirements. Du Pont technical service men will help you select equipment and start up your process. Just write E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

DU PONT
CONTINUOUS PEROXIDE BLEACHING

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Family of Weavers in India

HAYES new way ... cuts costs TODAY

You'll Produce at Lower Costs with Light Metal Beams

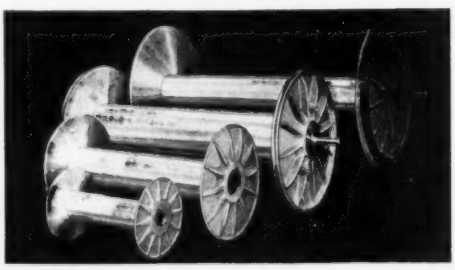
Weaving in ancient India was a family affair—slow, tedious and expensive, as any operation with primitive, inefficient machinery is bound to be. Today American mills with modern, high-speed production turn out millions of yards of fabrics at low cost.

In the past wood and cast iron has been the prevailing material used for beams with little change in design of workmanship. Today, Hayes Light Metal Aluminum and Magnesium Beams are recognized as an outstanding aid to production. These beams weigh less than half as much as conventional beams . . . providing substantial savings in shipping and handling costs.

Because they are accurately built and perfectly balanced . . . they rotate smoothly and uniformly . . . permit higher machine speeds with fewer rejects. The satin-smooth, highly polished, flanges and barrels cannot snag, rust, chip nor splinter. And even when loaded with fine denier acetate yarn, heads have the least possible deflection.

They will perform efficiently through many years of production with low maintenance cost. You'll find it well worth while to investigate the cost lowering aspects of Hayes Light Metal Section Beams, Loom Beams and Tricot Beams.

Write or wire for complete information on Loom Beams, Section Beams and Tricot Beams. Ask for Catalog 1-21.



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INDUSTRIES, INC.

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HOW THIS PATTERN WAS PRINTED IN MEXICO

To interpret best the dashing character of this brilliant native print—*and to cut production costs*—Acabados Textiles Marvel S.A., prominent Mexican textile mill, used Aridye® Pigment Colors.

Here's how they did the job on spun rayon: The coral ground was dyed in the usual manner with a dischargeable direct color. Aridye Yellow FY2G, cut 1:5 with regular Aridye Clear containing 16 ounces per gallon of sulfoxylate, was used for the yellow discharge. Aridye Blue FC2G, cut 1:10 in a similar clear, was used for the blue discharge. Aniline black was used for the black. After printing the fabric was dried, aged, chromed, cured at 340° F. and washed.

Like Acabados Textiles Marvel, other progressive textile printers 'round the world are finding that Aridye Pigment Colors CUT SECONDS . . . SAVE MONEY!

An Interchemical technical representative will be glad to discuss the many ways in which they will be of benefit to *you*. For full details write to Interchemical Corporation, Textile Colors Division—Pioneers in Pigment Colors for Textiles—Box 357, Fair Lawn, N.J.

Aridye *Pigment Colors*

CHECK THESE ADVANTAGES

Colors as printed are final in shade • Sharpness of mark
Top Fastness to sunlight
Uniformity of shade • Fastness to washing
Bright colors • Ease of application • No impairment of hand
Can be used in combination with ordinary dyes

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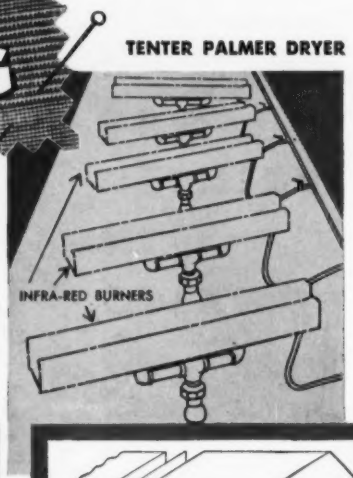

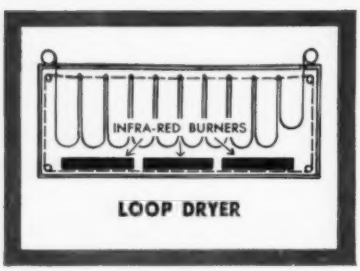

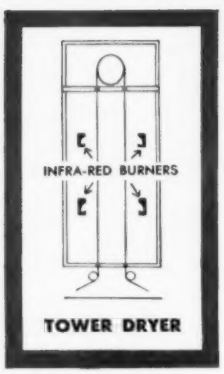

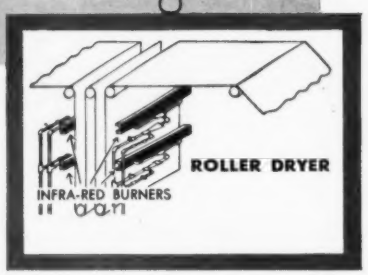

Illustrations courtesy Carbomatic Corp. Manufacturers of Infra-Red Radiant Gas Ceramic Dryers, Long Island City, N. Y.

Infra-Red Radiant Gas Dryers offer many an opportunity for increasing production without major capital investment for equipment. These applications of flexible GAS include pre-drying, curing, tenter frame drying, polymerizing, and many other processes for special types of fabrics, slashers and nylon settings.

The simplicity of modern Gas Equipment is demonstrated in the schematic installation drawings. Each of these shows a typical application of Radiant Gas Dryers designed to increase the productive capacity of existing equipment.

The results are a matter of record. In hundreds of textile plants the increased capacity of drying equipment ranges from 25% to almost 100%, varying according to type of fabric or yarn.

There's a wide variety of modern Gas Equipment suitable for virtually every textile operation requiring heat. An important characteristic is the automatic controllability of GAS through every temperature required for fabric or yarn processing. There are other features of GAS worth investigating—economy, speed, cleanliness, simplicity and meeting with insurance underwriters' requirements for absolute safety. In fact, it's always worthwhile to keep an eye on what's new in modern Gas Equipment for textile processing.

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE **NEW YORK 17, N. Y.**

MEMO # 3 of a Series

(1) Looking Forward
(2) Tradition or Progress
(3) Reputation or Performance
(4) Facts or Claims
(5) Take it or Leave it
(6) A Challenge

CABLE ADDRESS EDMOSCORP, NEW YORK

EDMOS PRODUCTS *Corporation*

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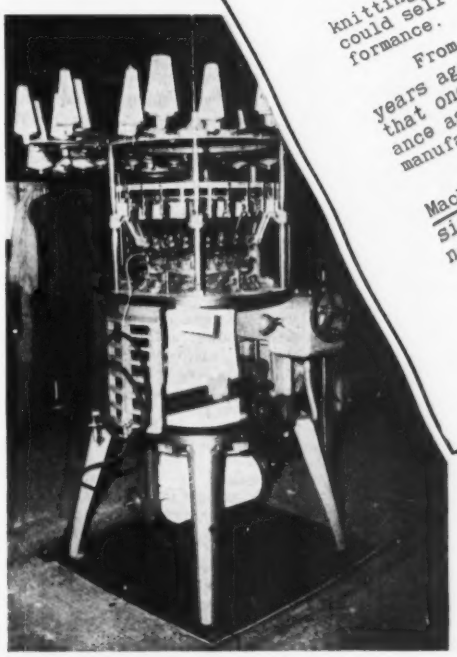
REPUTATION OR PERFORMANCE

A company that has been in business for a hundred years must have a reputation or it wouldn't be in business. But age isn't the buy word in the American way of doing things, it's Performance.

At war's end we decided if we could build a better knitting machine than any other on the market, we could sell it and build a reputation based on performance.

From the first Edmos machines built only a few years ago to the present Type E.E.M., mill records prove that one can build a sound reputation based on performance as against a reputation backed by a generation of manufacturing experience.

Let us prove to your satisfaction that Edmos Machines will produce more at less cost than any other similar type machines ever built. We need you, you need us. Write Dept. A for descriptive Literature.



Built in the following sizes
1x1 or 2x2—8 to 16 cut

12"—16 feeds	18"—27 feeds
13"—18 feeds	19"—28 feeds
14"—20 feeds	20"—30 feeds
15"—22 feeds	21"—31 feeds
16"—24 feeds	22"—33 feeds
17"—25 feeds	23"—34 feeds
24"—36 feeds	

ILLUSTRATED: Type EEM Edmos as shown at the 1949 Knitting Arts Exhibition

STEAM • HOT WATER • COLD WATER
AIR AND GAS • GASOLINE • OIL • BUTANE • PROPANE

Fig. 123 is an exceptionally rugged valve . . . available with various types of discs especially compounded to give top results on the services for which they are recommended. Discs can be renewed or interchanged quick as a wink, insuring long-time satisfactory valve service with negligible maintenance expense. Disc holder is slip-on type, perfectly guided. Hexagon head gland is an aid to easy repacking. A further economy feature is the distinctive long-wearing stem material developed by Lunkenheimer, eliminating stem-thread failure due to wear.

The "N-M-D" valve is also regularly available in angle, check and quick operating patterns. Circular No. 558, descriptive of the complete line, is yours for the asking.

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THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI 14, OHIO. U. S. A.
NEW YORK 13 CHICAGO 6 BOSTON 10 PHILADELPHIA 34
EXPORT DEPT. 318 322 HUDSON ST. NEW YORK 13, N. Y.

N. M. D. and other Lunkenheimer Valves are available in all industrial centers. You can depend upon your Lunkenheimer Distributor for prompt service on your requirements.

of confidence to good effect in counseling, but these must not be overlooked. Commendation for a strong characteristic or an accomplishment that can be related to the problem at hand is in order. Insincerity or summing up that glosses over real problems, worries, fears, or irritations is never justified, and will always complicate rather than clarify.

You must not try to accomplish too much too fast in your counseling endeavors. You must guard against preaching, lecturing, prying too deeply, or coming to a solution too rapidly. You must realize that you can rarely complete a counseling situation in one interview. You must follow up problems, you must watch for the psychological moment, you must hit while the iron is hot.

WHEN TO COUNSEL. When, you ask, will I do all this? Perhaps after a job has been laid out; a reprimand given; a request for transfer, leave of absence, or promotion discussed. Perhaps at a lull before the whistle blows, at a break between doffs, at lunch, after church or lodge meetings. Anywhere, anytime, a point may be scored for effective human relationships.

If you feel that you cannot take on additional detail, remember that only a small portion of your employees will require counseling during any given period. Also, those whose need is greatest may not continue to demonstrate such needs. You must realize that counseling in no way interferes with your regular methods of management, direction, and discipline.

And while your counseling skill and efforts are expended on a small percentage of your employees, you must be ever-mindful of the far-reaching effect on all your employees. One griper, not squelched, but led to a discovery of reason, purpose, and a sense of belonging and importance in a department, may improve the attitude of a dozen other employees. One fear, worry, or mistrust relieved, may prevent a serious production and employee-crippling accident. Any promotion of healthy adjustment to job environment cannot help but improve attendance, quality of product, employee turnover, accidents, grievances, and the standing of the department and yourself.

Counseling on the foreman-employee level puts in motion and helps keep active powerful forces for high morale, efficiency, and success. The cumulative potentialities of these forces, when contemplated, almost make one gasp.

But, to be the successful supervisor, you must not stand still and gasp long. You must consider the remark-

THE RAYON SUIT MEANS MONEY IN THE BANK!

Shown here are current menswear fabrics containing a substantial percentage of Celanese staple fiber. Reading top to bottom: Burlington Mills; Greenwood Mills; Verney Corporation.

Never before has there been anything like the recent demand for the rayon suit! More and more men are wearing them . . . particularly suitings made of fabrics containing a substantial proportion of Celanese* staple fiber. For these are the suitings that take to variety in textures and weaves . . . that adapt to soft or tailored treatment . . . that come out the winner against wrinkles. Celanese staple fiber is a key factor in this expanding market. Move along with it and you're sure to cash in!

Celanese Corporation of America,
180 Madison Avenue, New York 16, N. Y.

Celanese® ACETATE RAYON STAPLE FIBER

* Reg. U. S. Pat. Off.

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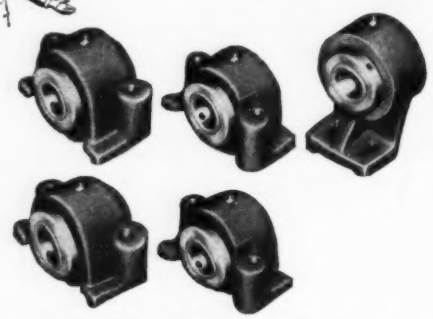
-SAVE POWER!
-REDUCE MAINTENANCE!
-DECREASE "SECONDS"!



Famous Dodge-Timken Bearings—housed, sealed, ready to install and especially adapted to loom operation. Top row: loomside crank shaft bearings, left and right hand, and outboard bearing. Bottom row: cam shaft bearings, left and right hand. Take full radial and thrust loads; maintain shaft centers permanently.

IT'S ANOTHER DODGE "FIRST"

LOWERED COSTS . . . better loom performance . . . increased production! This is big news in the textile industry created by Dodge power transmission equipment. Loom applications of Dodge-Timken Bearings save power, reduce maintenance 50%, cut lubrication costs 90%, reduce vibration, eliminate crank shaft wear, stop grease drip and oil-spot spoilage.

Modernize your mills. Learn what great results are being achieved with Dodge-Timken Bearing installations on both looms and line shafts. Call a Transmissioneer, your local Dodge Distributor, for information. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE MANUFACTURING CORPORATION • MISHAWAKA, IND.

DODGE

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FIRST IN POWER TRANSMISSION EQUIPMENT!

DODGE TRANSMISSIONEERS, graduates of an intensive training course, are located in all textile centers. Write us for the name of the one nearest you.

able results of counseling in other areas of human relationships. You will consider the benefits you bring to your own department. You will analyze your own strength and weakness in counseling technique and look upon each employee contact with new importance. No matter how successful you have been, you should realize that you must improve and progress in order to keep in step in a competitive business. To stand still, even for a moment, means a sure slide backward.

Cooperative Training

(Continued from page 105)

2. Production control.

Two days are spent observing the intricacies of handling orders, scheduling, routing, assigning, expediting, invoicing, shipping, and billing.

3. Accounting.

Here the functions of accounting and bookkeeping are shown. Payroll records and calculations are examined, and a brief summary of costing is included.

4. Personnel.

During two days, the students give time to the part played by human and personnel relations in the mill. Training classes, supervisory conferences, and safety meetings are attended to learn the part which training and re-training plays in efficient mill operation.

5. Design.

For one day, the trainees observe some of the problems of design, analysis, development, and improvement of the various fabrics being made in the mill.

6. Drafting.

Another day is given to some of the many problems which arise along mechanical design, development, and engineering lines.

7. Purchasing.

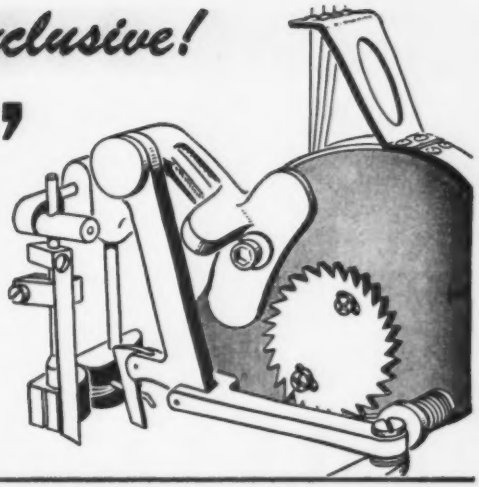
In the purchasing department, the students are acquainted briefly with requisitioning, ordering, delivery scheduling, receiving, and distributing the many hundreds of articles and necessities of modern industry.

RESULTS. All concerned were well pleased by their contact with the students. The students were extremely pleased and satisfied with their experience and are all looking forward to a renewal of their experiences the following year.

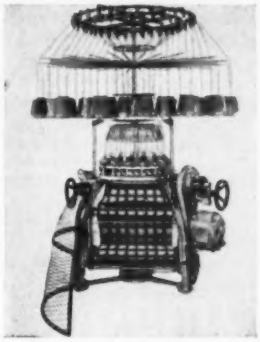
The following extracts are taken from the reports of departmental overseers— ". . . Trainees were intelligent and capable." . . . Men like these would make teaching a pleasant vo-

Now... Supreme Exclusive!

"NO-WASTE" KNITTING OF VARIABLE STRIPES AND PLAIDS



NEW SYNCHRONIZED CUTTERS* ELIMINATE ALL WASTE WHEN CHANGING COLORS



Model SA-ROF. Modern in design, proven in use, backed by experience.

This revolutionary Supreme development gives chest stripes, blazers and plaids a sales appeal that was never before possible. It saves yarn, dollars and time. It means clean-as-a-whistle fabrics that are easier to finish because the cloth does not have to be reversed. Easier to sell too; the buyer gets all cloth for his money . . . there's no braid of waste added into the cloth poundage.

An exclusive Supreme feature, the new waste-eliminating cutters are available on the Model SA Automatic Variable Striper and the Model SA-ROF Variable Stripe and Plaid Knitter.

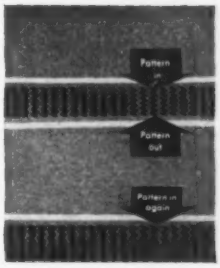
Here's how it works...

Each striping feed is equipped with one of these simple cutters. At the correct instant, the yarn that is going out of action is clipped off close to the narrow seam. It is then held in a unique clamping device along with the other yarns, each ready to go back into action the moment the pattern calls for it. No waste yarns, no floating yarns, no special and intricate stop motions.

***Patent Pending**

SK-120

Another New Development



THE AUTOMATIC PATTERN PLACER

Available on the Model SA-ROF, this new device lets you place a pattern wherever you want in plain or striped jersey cloth. You can engage or disengage the pattern at will, separating the pattern with plain or variable striped fabric. The result? Practically any combination of patterned and plain or striped jersey.

Write today for the free booklet "Variable Stripes and Plaids Pay" and free cloth samples that show other unique features and wide knitting ability of the Models SA and SA-ROF.

SUPREME

KNITTING MACHINE CO., INC.

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cation." "They showed a good grasp of explanations and insight to problems." ". . . Good workers . . ." ". . . Courteous . . ." ". . . Friendly . . ."

Officials of Lowell Textile Institute are gratified by the preliminary success of the program. A much greater participation by both mills and students in the years to come is hoped for.

In the summer of 1948, in addition to Merrimack, the following organizations were active in the program: Newmarket Mfg. Co., Lowell, Mass.; Chicopee Mfg. Corp. of New Hampshire, Manchester, N. H.; Waumbec Mills, Manchester, N. H.; Verney Mills, Manchester, N. H.; Verney Mills, Peterborough, N. H.; Barre Wool Combing Co., South Barre, Mass.; Arlington Mills, Lawrence, Mass.

Negotiations are under way with several other mills for inclusion in the program. However, there is still a need for many more mills in order to spread the advantages of this program to many more students.

More detailed treatment of the needs and problems of this program is given in a paper by Dean Simon Williams published in the bulletin of the Lowell Textile Institute, Series 52, No. 3.

The success of the program may well affect the future of the textile industry in New England. Many factors now indicate a critical balance which may well be swung towards a happy future by wide acceptance and participation in these ideas and ideals.

Knitting-Yarn Preparation

(*Continued from page 109*)

ROOM TEMPERATURE. The induced-draft fans make for better air circulation, and the slight breeze created is pleasing to the employees. The fan change and the cooling effect of the humidifier system have lowered the temperature in the spinning room by 2 to 3°

The yarn conditioning room is fitted with steam sprayers mounted at the ceiling. Temperature and humidity are controlled by instruments, and recordings are made for operating checks in knitting. Cones in slatted trucks remain in the conditioning room 24 hr. The yarn is then checked for standard 7½% moisture before it is sent to the knitting department.

To insure that yarn maintains its original conditioned state, Richmond has installed unit ceiling humidifiers in the knitting rooms to hold the relative humidity at 45 to 50%.

Another precaution is taken by having only about one day's supply of

WIPE OUT STATIC

from Your Production Picture with NOPCO* 1656-R the antistatic oil that assures better WORSTED production

Today, when speeded-up processes in worsted yarn manufacture tend to promote static, you'll find Nopco 1656-R an ideal trouble killer.

Fibers treated with this specifically formulated oil remain static-free throughout carding, gilling, combing and drawing operations.

You'll avoid "wild" and broken ends, produce even-running, quality yarn with this new, antistatic lubricant.

Nopco 1656-R also *eliminates* oxidation, and *reduces* soap costs 75%. In fact, this remarkable new oil enables the worsted manufacturer to obtain exceptionally good results—comparable to those achieved by users of famous Nopco FUA oil for processing wool.

...Yes, Nopco 1656-R means HIGH QUALITY WORSTED YARNS PRODUCED ECONOMICALLY . . . and in these competitive days what is of more importance to you?

Ask your Nopco representative for full details, or write today for complete information.

* Reg. U. S. Pat. Off.

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NOPCO CHEMICAL COMPANY

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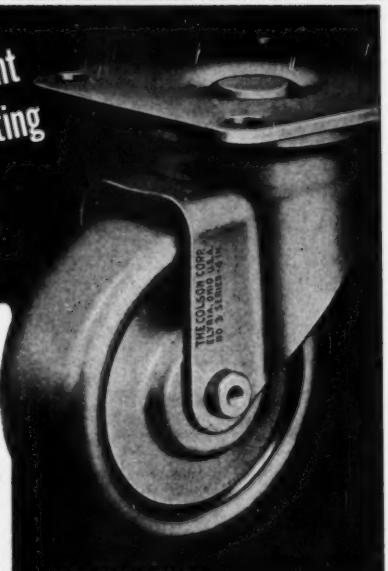
Speed Up Your Old Equipment with New Load-Floating Colson Casters



Model 3-427-16 with thread guards, designed especially for the Textile Industry

Rolling equipment that doesn't roll easily reduces efficiency and profits in your mill. There are 1458 standard Colson casters—many designed especially for Textile mills. They roll easily over all floors, swivel freely, are rust-resistant. Many models have thread guards. Colson also manufactures a wide range of trucks for the Textile Industry—hand trucks, platform trucks, box trucks, drum and barrel trucks and special devices. Write us or consult your phone book for the local Colson office.

Write Today For Free 68 Page Catalog

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • • LIFT JACK SYSTEMS • • INDUSTRIAL TRUCKS

yarn in the knitting department. Cones of yarn are stored in closed wooden bins. The cones are rotated so that each fresh supply is placed in the bottom of the bins. None is left unused for more than a day or two.

If yarn in the knitting room has a tendency to become dried out over the week-end shutdown, it is returned to the conditioning room until proper regain is obtained.

Hosiery Inspection

(*Continued from page 141*)

from standards before serious variations occur.

LOOPING INSPECTION. The foreman of the looping department inspects the machines daily. He also spends much time checking hose for menders, improper looping, long stitches, lint, etc. If he finds any defective workmanship from looping, he again inspects the machine that made it.

Fixers oil loopers once a shift. Cleaners, trained for the job, clean the loopers, seamers, and sewing machines after each shift.

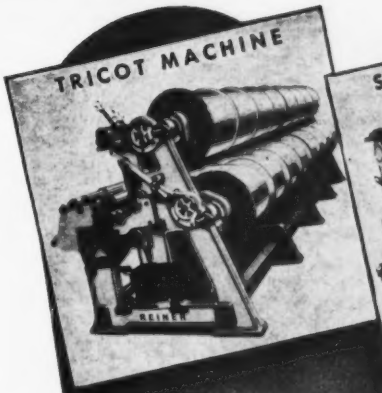
Individual looper-dial needles are changed by the fixer when necessary. Complete reneedling is done by the dial manufacturer every two years.

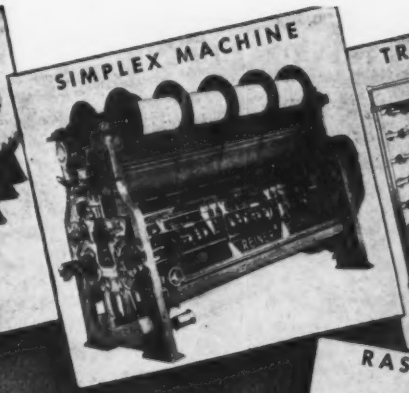
Defects are classified and recorded, and steps to correct the causes are taken. If the bad work was made in the looping department, the foreman and fixer investigate the cause. If it was caused by the yarn or in knitting, the damaged fabric is returned to the knitting department.

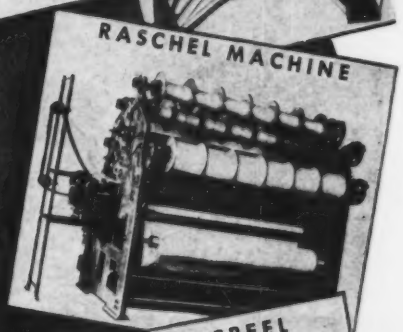
Only women's hose are processed in the seaming department. Operators have full view of the seam as it emerges from the machine, and any irregularity is quickly detected. Hose with bad seams are returned to the seamers who sewed them. If practicable, the faulty workmanship is remedied by removing the seam and repeating the seaming operation. In case the defect is due to mechanical trouble, a fixer is called to make proper adjustments.

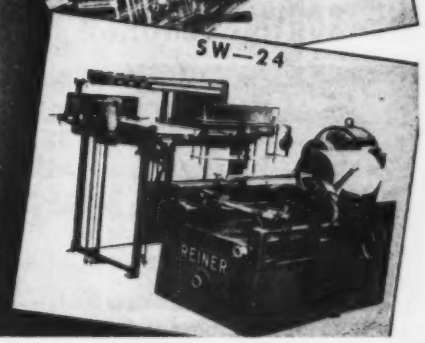
From the looping and seaming departments the goods progress to the sewing and inspecting departments. Anklets are attached to the rib tops and then sent to inspection. Women's hose are sent direct to inspection.

INSPECTION DEPARTMENT. Two groups of gray-goods inspectors operate in this department. One inspects women's hose, the other anklets. All defective goods are classified and charged to the operator responsible for the defects. Records are kept on









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. . . . Check this list for the efficient Reiner machines to keep your products in the front rank of progress, today and tomorrow.

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- Raylooms.
- Raschel Machines.
- Simplex Machines—double knit.
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2 Pulleys float on shaft
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Results . . .

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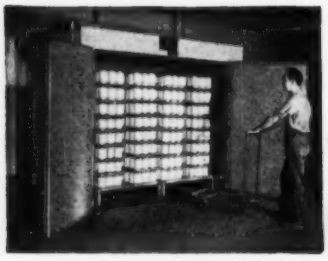
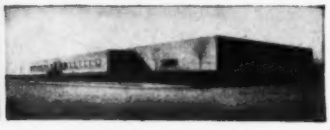
"H-W" CONDITIONERS
in use by
THE SCHWARZENBACH HUBER COMPANY



View of new "H-W" CONDITIONER installed in mill of Luray Textile, Division of The Schwarzenbach Huber Company at Luray, Va., where other "H-W" CONDITIONERS have been in use for many years.

in the following mills:
LURAY, VA.
BETHLEHEM, PA.
ALTOONA, PA.



New plant of Schwarzenbach Huber Company, Bethlehem, Pa., equipped with "H-W" CONDITIONERS

* Trade-Mark Reg. U. S. Pat. Off.
Full particulars in Bulletin UC 1, upon request.

The Industrial Dryer Corporation
STAMFORD, CONN.

these goods, and reports are issued daily to persons concerned.

Storage spaces have been carefully labeled to guard against mixing stock and for inventory control. Wrong or mixed stock from this department can disrupt the final processes in production.

A great deal of emphasis is placed by the company on its dyehouse operations. Careful control is maintained in measuring and mixing the dye formulas. Errors generally call for stripping and redyeing, processes which are harmful to hosiery. In scouring, close control is maintained over temperature, the time in which the bath is brought to a boil, and the amount of salt used to set the depth of the dye.

In the case of salt, it has been found that light blue or pink shades require 5% salt, based on the weight of the dye run. Navy and red shades require about 50%. The average shade for women's hose requires approximately 10%.

DYE SAMPLING. The mill generally runs the machine 15 min. at the boil after salt is added. Then a sample is taken for shade and evenness. If the sample measures up to standard, the bath is dropped and the goods rinsed. A mildew preventive is added in processing anklets, while finishing agents are added for women's hose.

The rinse is run for 20 min. and a sample taken for checking before the goods are transferred to the extractors.

Close inspection for substandard quality and off-color shades is made in the boarding room. Proper board fitting and cleanliness are insisted upon in this department. The alertness of the foreman and the care he exercises in training personnel are reflected in the workmanship and efficiency of the department. Foremen are cautioned to be quick to detect and to correct any bad conditions or practices that may develop in the department.

Paramount boards are used for all hose. Anklets and half-hose forms are heated with steam at a pressure of 18 lb. Rayon and nylon boards are heated with water. Pressure for rayon is about 8 lb., nylon 2 lb.

CLEAN BOARDS. Boarding forms are cleaned every shift by wiping with a dry cloth or cleaning waste. After the cleaning, they are lightly waxed. If a board develops rough places, it is buffed with very fine emery cloth and polished with waste and wax.

In establishing this system of quality control, markings for each machine and shift were set up. These marks enable the inspectors to trace any defect in goods or workmanship back to the responsible operator and machine.

NEW
STAINLESS STEEL HERRINGBONE HUMP REEL

Eliminate Re-Dyes

Hunter's revolutionary new herringbone hump reel (patent applied for) has proved itself superior on both the new and old Hunter piece dye kettles as well as those of other manufacture — proved itself on everything from 7 oz. knit goods to 32 oz. Meltons. Universally good results have been obtained on all woolens and worsteds. The unique herringbone design effectively opens all types of cloth; it eliminates the chance of streaks and kettle cracks caused by goods running in one fold; it eliminates the channeling which occurs in some hump reels, and also slip and chafe marks. The new Hunter reel is made in any diameter required and may be supplied in elliptical form for rayon piece goods. Further information is yours for the asking.

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QUICK TRAVERSE WINDER
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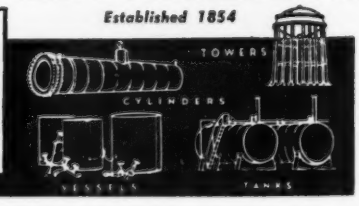
PRESSURE VESSELS
FOR TEXTILE LIQUIDS

• Cole builds vessels to your specifications — dye-vats, kiers, starch-kettles, acid tanks, jib boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with monel metal. Our long experience in the design and fabrication of vessels for the textile industry may be of help to you. Write for latest Cole catalog—"Tank Talk."

R.D. COLE
MANUFACTURING CO.
NEWNAN, GA.

Established 1854



Textile Equipment News

(*Continued from page* 180)

powered by a 4 to 28-ft.-per-min. variable-speed drive, conveys the carpets through a two-zoned 50-ft. oven.

The drying and curing zones are each equipped with a 7-ft. gas infrared generator facing down, and four air-cooled large-volume fans, two above the conveyor belt and two below.

Both zones have separate exhaust systems for removing saturated air and volatiles. Indicating-temperature controllers maintain uniform heat throughout the oven.

A Premix air-gas combustion system is used for supplying fuel to the gas infrared generators which burn manufactured, natural, propane, butane, or vaporified gases. The Premix system includes a high-pressure turbo-blower, automatic butterfly air valves, atmospheric gas-pressure regulators, and aspirator mixers. Blast pilots, also with a Premix system, are employed to ignite the generators. These pilots have automatic spark-plug ignition.

To meet Factory Mutual requirements, safeguarding controls have been installed on both the oven and conveyor. This equipment includes safety shut-off valves, relays, air-flow switches, and flame controls.

The drying and curing range was designed to produce from 4,000 sq. ft. of carpet with a heavy latex spray to 10,000 sq. ft. with a light spray. The drying and curing cycle varies from 2 to 5 min., depending on the latex application.

Latexed carpets are treated to thermal shocks of radiant heat in both the drying and curing zones as they pass under the infrared generators. These generators are located in the first 3-ft. section of both zones. In the remaining sections, the carpets are hit on both sides with high-velocity air. The air temperature in the drying zone is maintained at 250° F., and in the curing zone at 350° F.

Temperature controllers actuate a motorized air valve, which not only modulates the oven temperature, but also raises or lowers the intensity of the radiant heat. The temperature of each zone is also independently regulated by means of butterfly air valves.

Operating costs of the drying and curing range are said to run approximately a fraction of a cent per square foot of carpet, since the gas infrared generators, having a high heat release and operating very efficiently with the Premix system, consume very little gas. Consumption of propane gas based on 250 Btu. per cu. ft. is 400 cu. ft. per hr.

Outside the normal greasing of

Cut your knitting cost on

ELASTIC FABRIC

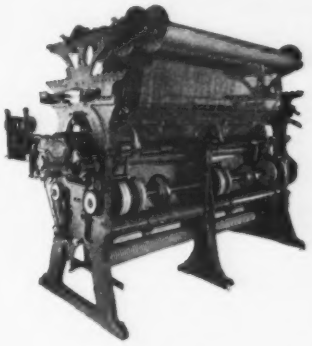
Elastic net for girdles, foundations and brassieres knit on the *Kidde* Knitter is creating a sensation in the market today. The quality is outstanding —the production rate exceptionally fast.

New high speeds are being maintained with exceptional efficiency on the *Kidde* Knitter—because it is ruggedly built to absorb the strains of elastic. The power let-down for controlling the rubber beams is non-electric, reliable in action. The needle bar motion is specially designed for high speed with heavy loads.

When you use the *Kidde* Knitter, your costs go down on elastic net—and on these other fabrics, too: dress fabrics; veilings and nettings; dishcloth material; curtain fabrics; narrow fabrics; shoe cloth; laundry nets; knitted outerwear fabrics for sweaters and polo shirts.

Cut knitting cost on these fabrics too with a *Kidde* Knitter

DRESS FABRICS. NETTINGS and VEILINGS. DISHCLOTH MATERIAL. LAUNDRY NETS. CURTAIN FABRICS. NARROW FABRICS. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters and polo shirts.

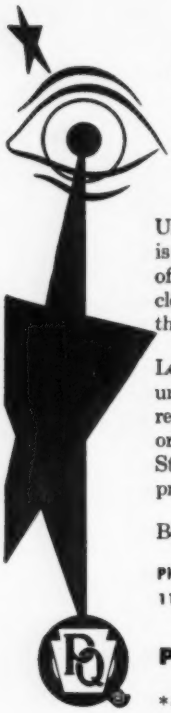


The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

Free literature is available on the Kidde *Knitter. Write for your copy.*

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

Kidde Knitter



focus on quality . . .

star* silicate

Uniform top quality from each and every peroxide bath is certain when you choose Star Silicate of Soda for your bleaching assistant. Star is that bright, clear silicate of high, constant purity, the same today and tomorrow as it has been always.

Leading mills rely on Star quality. Lack of uniformity in the alkaline content, for instance, can result in higher tensile strength losses, or the loss of full bleaching value from peroxide. Star's purity, clarity, stability, and proper reserve of alkalinity also save money.

Be sure of quality with Star Bleach Assistant.

Philadelphia Quartz Company
1139 Public Ledger Bldg., Philadelphia 6, Pa.

PQ SILICATES OF SODA

**Reg. U.S. Pat. Off.*

it takes GOOD BEAMS to make good warps!

PROBLEM: ORDINARY BEAMS WON'T HANDLE THE PRESSURES OF NYLON AND RUBBER YARNS!

solution . . .

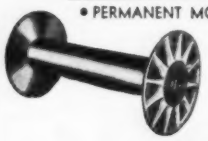
MILTON NYLON & RUBBER TRICOT BEAM

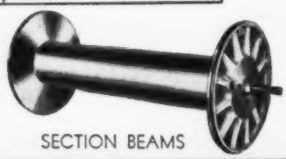
Tested and proven under actual operating conditions, here is Milton's forged head beam designed especially to withstand extreme pressures encountered when warping tremendous yardages of monofilament; fine denier, low turn nylon; and rubber yarns! Heat-treated, aluminum alloy heads and barrels permanently joined with continuous heliarc welds. Write for complete information!

- FORGED HEADS
- RIGID BARRELS

MILTON LIGHT METAL BEAMS are the result of years of close collaboration with mill production men . . .

- PERMANENT MOLD HEAD TRICOT BEAMS





SECTION BEAMS

MILTON MACHINE WORKS, Inc.
DESIGNERS — ENGINEERS — MANUFACTURERS
MILTON, PENNA.

motors and bearings, little maintenance is said to be necessary on the heating equipment, oven, and conveyor.

The drying and curing range, primarily designed for the carpet industry, lends itself readily to such drying, baking, and curing applications as the drying and curing of resins on textiles, setting of nylon, curing of printed dyes on textiles.

The range is a self-contained unit with the source of heat an integral part of it, making unnecessary outside sources of heat, such as boilers for high-pressure steam supply or gas-fired air heaters.

Pushbutton controls for running the machine have been counted on a central panel board and have been so simplified that an ordinary mechanic can master them within several minutes.

Oil-to-gas converters designed to vaporize No. 1, 2, or 3 oil can be supplied where manufactured, natural, or bottled gas is not available. The cost of burning vaporized gas runs in line with the other gases.

The Process Heating drying system incorporated into the range is said to have proven itself to operate at approximately half the cost of steam heaters and about one eighth the cost of electric heaters.

Initial installation costs of the Process Heating drying system and drying and curing range are said to run well below those of steam- and electric-heated ovens. The range should pay for itself in less than one year, the manufacturer states.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-102.

New Fluorescent Lamp Cuts Costs Two-Thirds

Fluorescent lamps that last three years in mills, on a one-shift basis, were announced by Sylvania Electric Products Inc., New York, N. Y. The lamps are said to deliver over 200% more lighting value and give a reduction in lamp failures which cuts replacement costs by two-thirds.

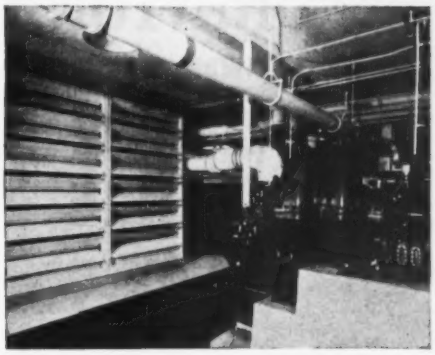
To request further information, please use the card on page C of the Reader-Service dept.; refer to T-89.

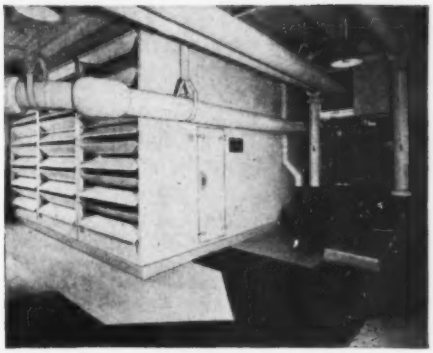
Balanced-Circuit Device Measures Yarn Tension

For obtaining accurate quantitative data on tension conditions in textile spinning, a new instrument, called a yarn tensiometer, has been announced by Special Products Div., General Electric Co., Schenectady 5, N. Y.

The new device measures yarn ten-

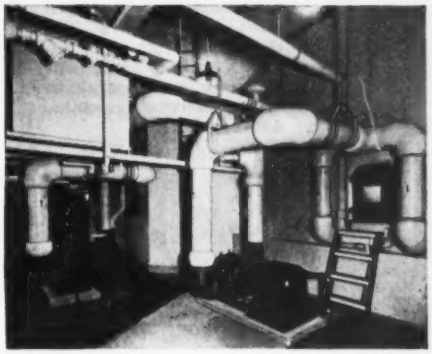
Bahnson CENTRAL STATION
AIR CONDITIONING SYSTEMS



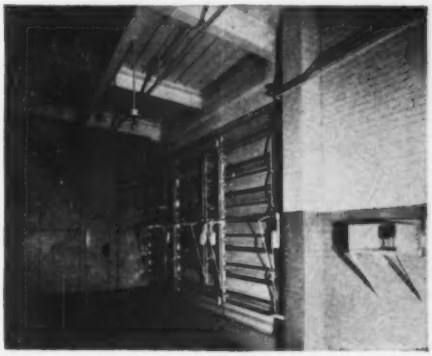


Bahnson Central Station Air Conditioning Systems are installed in cotton, rayon, wool and nylon plants in capacities ranging up to 280,000 cubic feet of air per minute per single air washer and are designed for either evaporative or refrigerative cooling, including air cleaning and filtering.

Quality production, efficient operation and worker comfort can be measured in today's modern plants by the adequacy and scope of the air conditioning system. Bahnson engineered and Bahnson built Central Station Air Conditioning Systems offer the best in design and workmanship for year 'round humidity and temperature control to meet the requirements of fibre, machine and operator. Bahnson engineering is based on more than 34 years of experience in the development and application of air conditioning equipment and systems.



Illustrations show apparatus room of Bahnson Central Station System with refrigeration.

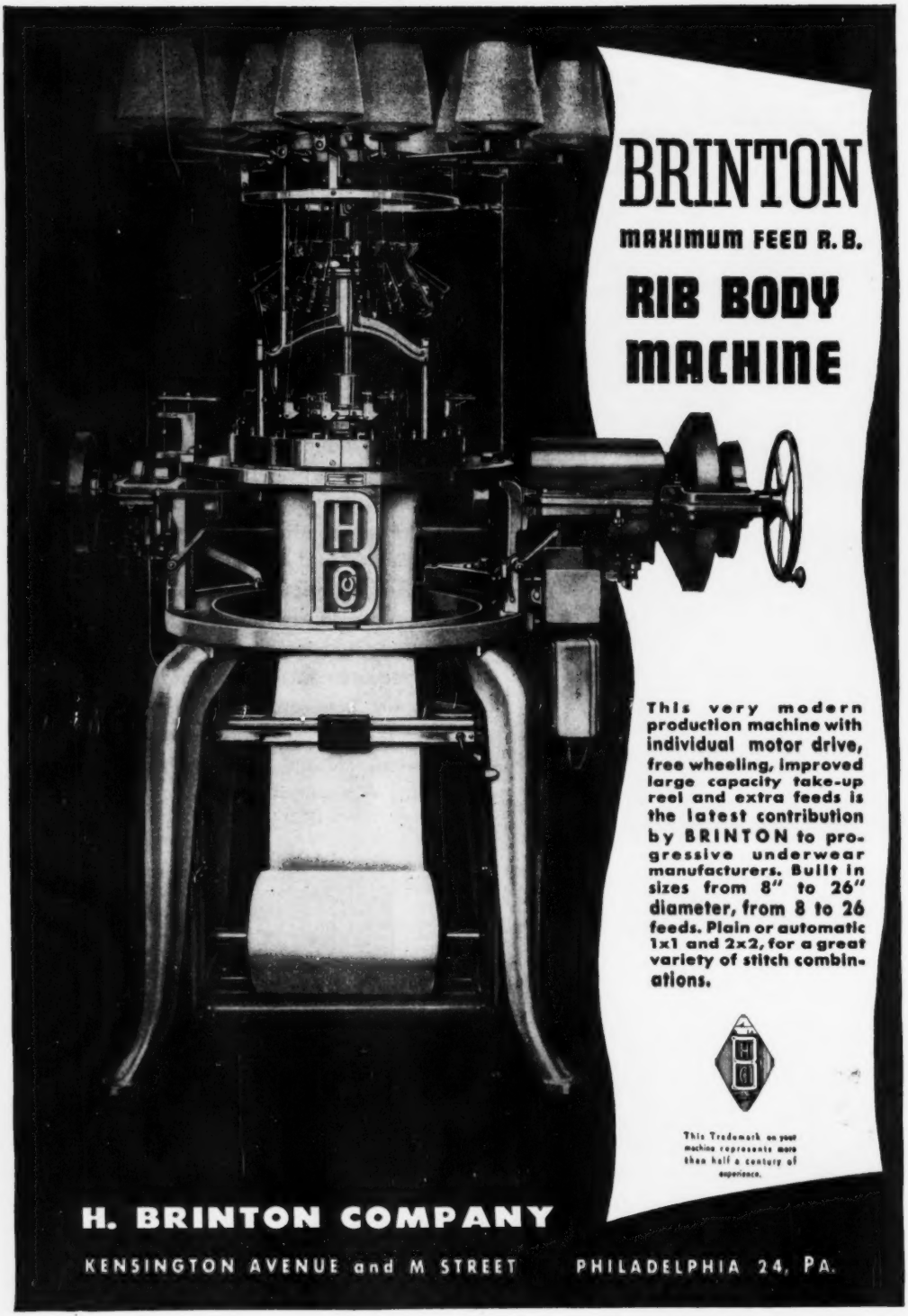


Bahnson System

AIR CONDITIONING ENGINEERS

THE BAHNSON COMPANY

WINSTON-SALEM, N. C.


BRINTON
MAXIMUM FEED R. B.
RIB BODY
MACHINE
This very modern production machine with individual motor drive, free wheeling, improved large capacity take-up reel and extra feeds is the latest contribution by BRINTON to progressive underwear manufacturers. Built in sizes from 8" to 26" diameter, from 8 to 26 feeds. Plain or automatic 1x1 and 2x2, for a great variety of stitch combinations.
This Trademark on your machine represents more than half a century of experience.
H. BRINTON COMPANY
KENSINGTON AVENUE and M STREET PHILADELPHIA 24, PA.

Color Dynamics..

We'll gladly submit a COLOR DYNAMICS survey of your plant—*free* and without obligation!

• *One of the departments of the Lily Mills Company of Shelby, N. C., after it had been decorated according to the principles of COLOR DYNAMICS.*

PITTSBURGH COLOR DYNAMICS is much more than a system of painting. It takes into consideration many factors upon which an accurate color plan must be based.

We'll be glad to make a scientific *color-engineering study* of your plant on request—free and without obligation on your part.

Pittsburgh's Painting System—COLOR DYNAMICS—has transformed many drab and uninviting factories into pleasant and comfortable plants. It has won praise such as this from J. W. Schenck, secretary of Lily Mills, of Shelby, N. C.:

"**Use of specific colors** based on your Color Dynamics' principles is helping us to maintain a higher employee morale, a good safety record and efficient production throughout our entire plant."

Wherever COLOR DYNAMICS has been applied plant workers' eyefatigue is lessened, absenteeism is reduced, accidents are prevented, housekeeping problems are reduced, and quantity and quality of output are improved.

Why not test COLOR DYNAMICS in your plant—in a department or on a machine or two. Then note the difference in efficiency and morale.

SEND FOR A COPY OF THIS BOOK!

Pittsburgh Plate Glass Co., Paint Div., Department TW-99, Pittsburgh 22, Pa.

☐ Please send me a FREE copy of your new revised and enlarged Booklet "*Color Dynamics In Industry.*"

☐ Please have your representative call for a Color Dynamics Survey of our properties without obligation on our part

Name _____

Street _____

City _____ County _____ State _____

PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

PROCTER & GAMBLE

PROXOL

MADE IN U.S.A.

TODAY'S BIGGEST "BARGAIN" IN WOOL OILS!

A "bargain", says the dictionary, is an advantageous transaction." And plenty of woolen processors can testify that the better results they have had with Proxol thoroughly justify calling Proxol "today's biggest bargain in wool oils."

Procter & Gamble

CINCINNATI, OHIO

Proxol's advantages show up in all of the many processing operations involved in converting raw wool fibers into finished fabrics.

Proxol emulsions are stable. Proxol increases carding and spinning efficiency. It's anti-static and non-corrosive...reduces fly and waste...won't harm aprons. Rovings are uniformly firm and well condensed.

Proxol undergoes no change when it's on your raw wool, yarn or fabric. No matter how long it is stored, Proxol won't heat up or develop odor or discoloration. *And Proxol scours out easily!*

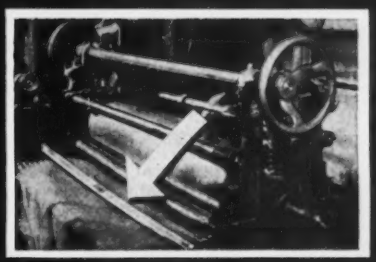
If you're interested in smooth, trouble-free production, it will pay you to try Proxol. You, too, will say it's today's biggest bargain in a truly efficient wool oil.

THR-R-R-IFTY! IT'S ALL WOOL N' A YAR-R-R-D WIDE!!

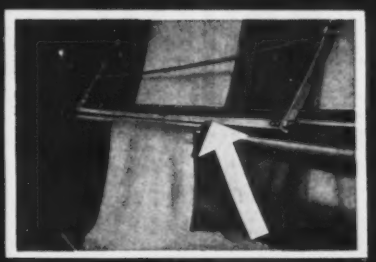
PROXOL—

made by the makers of Olate, America's #1 all-purpose textile soap.

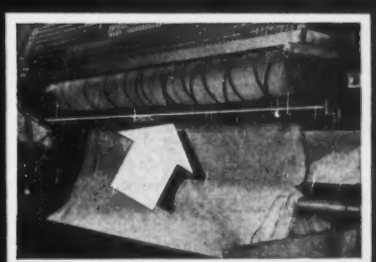
Do you have static trouble...



HERE? On this Peralta machine at Broadalbin Knitting Company, Broadalbin, N. Y., installation of an Ionotron reduced spoilage 50%, boosted production 10%, cut operating time 10%, and increased wool card quality.



HERE? Installing this Ionotron in the Triangle Finishing Corporation's plant, Johnstown, N. Y., eliminated cloth swing stoppages caused by static electricity — made possible better cloth folding — reduced total stoppages throughout the plant by 20%.



HERE? On this industrial ironer at the Cameo Curtain Manufacturing Corporation, the Ionotron quickly proved an important factor in eliminating static troubles in the production of nylon marquisette curtains. It operates continuously without expense.

HERE? This picture might be a tape condenser of a wool card, or a drawing frame delivery unit, a finishing machine, hosiery boarding machine, or elastic thread processing equipment. Ionotrons have solved static problems on all.

To get rid of it, send coupon!

Without humidity, without power connection or operating expense, and without contact with the work — the Ionotron continuously drains away static charges . . . eliminates or greatly reduces bunching, lapping, and other troubles with fibres and fabrics. Find out how it works — send for free bulletin today!

IONOTRON Static ELIMINATOR

***Dept. U-9, U. S. Radium Corp., 535 Pearl Street, New York 7, N. Y.**

Please send illustrated bulletin describing uses of the Ionotron Static Eliminator in textile operations.

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

**Inquiries from Canada and British Commonwealth should be addressed to Eldorado Mining & Refining (1944), Ltd., Ottawa, Ontario, Canada.*

You Couldn't Find An Easier, Quicker Sudsing Soap or Flakes Than...

DRUMMOND

LEAVES FABRICS CLEAN . . . SOFTER . . . COLORFUL

As Free Sample Will Show You!

Both DRUMMOND Soap and Flakes have the advantage of high body and low alkali content . . . an advantage that instantly leaves fabrics clean with a downier feel, brighter color and whiter white.

We offer you a free sample to show you what we mean.

Easier—quicker-sudsing DRUMMOND—that's the answer to your cleaning problems.

Write today for your ample-size sample of DRUMMOND Soap—just ask for Flakes or Solid.

TEXTILE OILS AND SPECIALTIES

Standard Soap Co. of Camden

205 South 2nd St. CAMDEN, N. J.

James A. Greer, Southern Manager P. O. Box 306 Greenville, S. C.

WILTEX Inc.

Aluminum Cloth Rolls

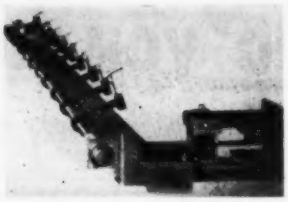
Rustproof Lightweight

NO SLOT NEEDED WITH THE AMAZING WILGRIP NON-SLIP FINISH

Now In Standard Use in Many Mills

1340 E. 222nd St. Euclid 17, Ohio

Buy ★ U.S. ★ SECURITY BONDS *Now!*



***TENSIOMETER GUIDES** replace regular thread guides. Pressure on shaft rotates shaft and causes tension to be measured.*

sion and, by means of a recorder, gives a permanent visual record of the measurement. The instrument provides an accurate check on the tension of yarn as it is wound on bobbins, enabling manufacturers to operate under optimum tension conditions and thus produce a firm, uniform package of yarn.

The equipment consists of a shaft which is bolted to the frame in place of the threadboard, an armature strip which is connected to the shaft, two coils or strain gages forming a balanced circuit on either side of the armature strip, and a power supply. The tensiometer shaft is bolted to the frame so that the tensiometer yarn guides replace the regular yarn guides on the machine. The shaft is free to move in ball bearings; its only restriction is the armature strip which is connected solidly to the shaft and which is restrained at its other end by a clamp. Any pressure on the yarn guides tends to rotate the shaft causing the armature strip to bend. In bending, the armature is moved away from one coil face and nearer to the other coil face, thus upsetting the balanced circuit. The resulting current flow is a recordable measure of tension in the yarn. This unbalanced current is fed to a G-E photoelectric recorder or some other type of recorder of suitable sensitivity.

Normally, the unit is used measuring ten ends at once; dividing the total by ten determines the average tension. The tensiometer can function, however, using only one end for gathering data on individual traveler or spindle performances.

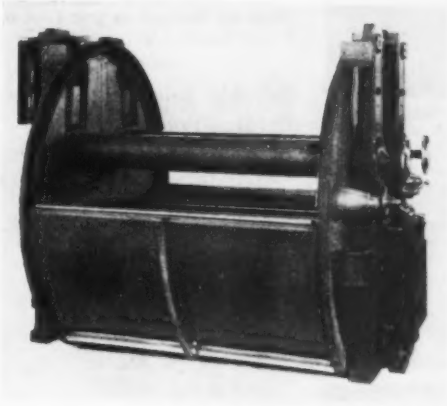
Ranges of sensitivity are readily adjustable by moving the coils closer to or farther from the armature, or by adjusting the stiffness of the blade itself.

In addition to serving as a check on yarn as it is being produced, the yarn tensiometer will be a valuable set-up tool for spinning mill operators. According to G-E engineers, the instrument can be used when remodeling spinning frames or installing new machines, in recording effectiveness of

Triumph of Functional Designing

GLASCO
METAL INDUSTRIAL EQUIPMENT
PRODUCTS

CYLINDRICAL DYE JIG ENCLOSURE



(CUT OF OPEN POSITION)

(CUT OF CLOSED POSITION)

At the recent textile dyeing and finishing show the new Glasco Dye Jig Enclosure proved that it had eye appeal as well as solid merit.

"It's a well done job," "Everything accessible," "Like a new Packard compared to a Ford Model T," were some of the comments made by those who saw it.

More Practical Considerations Followed:

1 The way the close fitting hood saves space.

2 The way the shape minimizes dripping that might spoil goods.

3 The automatic steam vent that prevents steam blast when hood is opened.

4 The absence of cables, chains, pulleys, or counter-weight posts to obstruct jig operation.

5 The ease with which these enclosures can be fitted to any standard jig.

6 The way the sections of the enclosure swing down and under the jig when open.

7 The effortlessness of opening and closing the counter balanced section of the enclosure, which operates on roller bearings.

8 The big windows for observation when closed.

It is features like these that make this compact, efficient jig enclosure of interest to dyers, because its contributions to better, safer handling of delicate fabrics, and because the improvement of working conditions is great and immediate.

We will be glad to give you full information about these modern enclosures.

GLASCO EQUIPMENT CORP.

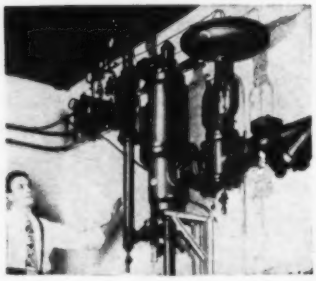
METAL EQUIPMENT FABRICATORS SINCE 1916

10 Wait Street **Paterson, N.J.**

SLASH HOT WATER COSTS UP TO 1/3 OR MORE!

... and give yourself all This

- **Any VOLUME of Hot Water INSTANTLY**—Save Space! Eliminate storage tanks and related heating facilities!
- **Immediate Adjustment to Any Desired Temperature**—Waste neither water nor time waiting for proper temperature . . . you are ready to go to work when steam is up in boiler!
- **Smooth, QUIET Operation at ALL VOLUMES**—Transfer heat from steam to water—no banging or rattle!
- **Automatic Temperature Control of Large or Small Quantities of Water**—Automatic adjustment to compensate for changes in pressure and volume!



These and more benefits can be yours with the PICK Instantaneous Steam Injection Heater. Seven sizes (10 to 200 gal. per min.). Patented "Pressurizer Piston" assures trouble-free performance. Easily, economically installed in old or new systems. Write for Bulletin WH-11.

PICK MFG. CO., 499 Alan Ave., West Bend, Wis.

Jot Down These Figures!

Estimate Your Annual Hot Water Costs

Coal, oil or other fuel . . . $_____

Water . . . . . $_____

Maintenance of System . . $_____

Miscellaneous . . . . . $_____

TOTAL $_____

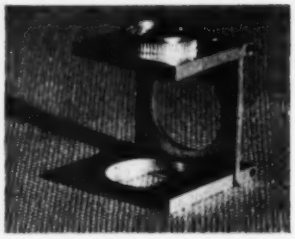
If your above costs are over $500, it should pay you to write Pick immediately for complete "Engineering Analysis Forms".

Pick STEAM INJECTION HEATERS INSTANTANEOUS

variable-speed spinning modifications, and in experimental work.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-93.

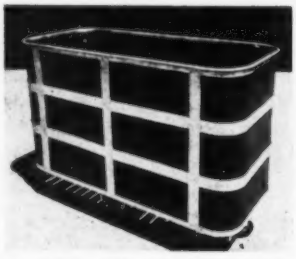
Folding Pick Glass Is of All-Brass Construction



A NEW PICK GLASS of all-brass construction has been introduced by J & M Products Co., 299 Third Ave., Brooklyn 15, N. Y. The glass has a ½x½-in. square opening, a replaceable lens, and is collapsible. All parts are tight folding; and when collapsed, the glass will not fall open. Price is $3.00.

To request further information, pease use the card on page C of the Reader-Service dept.; refer to T-90.

Truck Is Made of Fiber and Aluminum



DURABILITY AND LIGHTNESS are main features of this new combination truck. Bottom shadow reveals slots in the base.

A new-type combination vulcanized-fiber-and-aluminum truck for general textile uses, with the exception of conditioning, has been developed by J. C. Paddock Co., Spartanburg, S. C. Main features of the new truck are durability and lightness (less weight than an all-aluminum truck). The truck is said to be of such tensile strength that it will outlast six of the aluminum type.

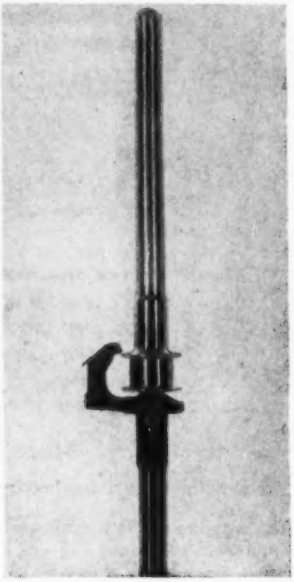
The new truck is made in three styles—square, streamlined, and rounded-corner. The bottom is of slotted aluminum strips properly spaced. The side walls of the truck are of $\frac{3}{32}$-in. or $\frac{1}{8}$-in. genuine vulcanized fibre. Side braces are of aluminum bands of sufficient strength to prevent bulging, etc. The top rim is a special one-piece extrusion. No wood is used in the truck. The rivets are brass, tubular type. Inside construction is smooth, and there is nothing to damage yarns. The materials used prevent corrosion and will require no replacements or repairs, the manufacturer states.

The streamline type is built for reducing concussion when coming in contact with equipment, as it is designed to slide off without damage to either the truck or equipment.

This new combination truck is supplied any size to meet individual needs.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-84.

Durable Spindle Retains Trueness



EXCEPTIONAL DURABILITY is said to be an outstanding feature of this new spindle for paper tubes.

A new spindle, called Alumi-Sheath for use with paper tubes has been developed by Whitin Machine Works, Whitinsville, Mass. The new spindle is said to be modern in design and construction, light in weight, and perfectly balanced. Unaffected by humidity and temperature changes and shock-resistant to an unusual degree, the spindle retains its inherent trueness under severe operating conditions, the manufacturer states.

Essentially, the new design consists of a short heat-treated steel blade with

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a special enlarged top, an aluminum sheath bored at the bottom end to be a press fit onto the top of the steel blade, and a chromium-plated steel whorl that is press fitted over the bottom end of the aluminum sheath. When these parts are assembled, the result is a spindle that is practically one solid piece of metal built upon a single axis.

An additional feature of the Alumi-Sheath spindle is that it is used in conventional bolsters and cases, whether of plain-bearing design or anti-friction bearing design. The spindle affords speedy replacement of worn bolsters with no long "down time." Also, mills desiring to modernize may use this latest-type spindle without buying new bolsters and cases —although Whitin does recommend the use of its new oilite bolsters with the Alumi-Sheath spindle to make the modernization more complete.

Still another additional feature of the Alumi-Sheath spindle of interest to some is its adaptability to the new wood tubes as well as to the paper tubes.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-95.

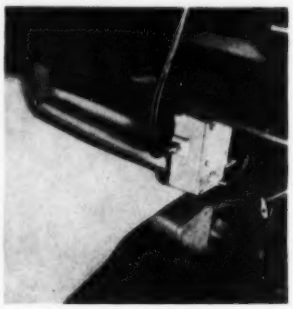
Air Motors Control Squeeze-Roll Pressure

Another seven-tank open-width machine of stainless-steel construction has been announced by Birch Bros., Inc., Somerville, Mass. The machine has roller-bearing squeeze rolls to which pressure is applied by Foxboro air motors, except on the last tank which is equipped with air cylinders to give a 30,000-lb. squeeze. The drive is by individual d-c. gearmotors controlled by rheostats actuated by built-in dancer-roll compensators to give accurate tension control. The entering end of the machine is fitted with close guiders. The delivery end has both a folder and rolling-up arrangement.

The machine was built for the new plant of one of the leading mills for scouring and crabbing rayons, rayon blends, worsteds tropicals, serges, and gabardines.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-101.

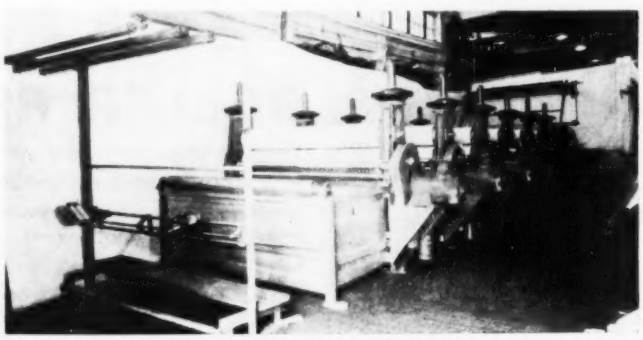
Radiation Used To Measures Thickness



AMOUNT OF ABSORPTION by fabric of radiation from source below fabric is determined by detector above fabric and converted to a measure of weight per unit area of thickness.

Thickness of yarn, roving, and coatings on fabrics can be measured by the beta gage, a new instrument making use of radioactive isotopes. (TW, Dec. '48, p.103). The instrument has been developed by Tracerlab, Inc., 55 Oliver St., Boston 10, Mass.

Essential components of the gage are a source of beta radiation from Strontium-90, and a radiation detector. The material to be measured is interposed between the source and the detector and a part of the radiation is absorbed by the sheet material in pro-



DESIGNED for uniform finishing of gabardines and other fabrics is this new seven-tank stainless-steel open-width machine.

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123 Treaty Rd., Drexel Hill, Pa. Phone Millton 2940
H. R. Fisher, Concord, N. C. Box 83—Phone 8366
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Box 1187 Gaspee 1-0100

portion to its weight per unit area. Weight per unit area or thickness is read on a properly calibrated recorder connected to the detector. The recorder scale can be calibrated in terms of a plus-or-minus deviation from specifications or as an absolute thickness or weight reading.

For all practical purposes, chemical composition of the sheet being measured does not effect the calibration of the instrument. The beta gage is comparable to a chemical balance in that it will provide the same information as is obtained by weighing on a balance a known area of the sheet material in question. Moisture, chemicals, etc., affect results only in proportion to their weight in the material.

One of the most outstanding advantages of the gage is the fact that no physical contact is made with the material being measured, causing no marking of delicate or easily marred surfaces as may be the case with mechanical and other contracting gages.

The Model SM-2 Tracerlab beta gage uses a Brown Electronik recorder. The gage standarizes itself completely automatically every 30 min. The inherent accuracy of the beta gage is said to be ±0.05% of sample thickness or ± 0.03 mg./cm.², whichever is larger. The amount of drift occurring between standardization periods is within the limits of inherent accuracy of the beta gage. Long-life batteries which require renewal no more often than three a year are used as power supply to eliminate the need for a closely regulated a.c. power supply. Maximum sensitive length of the gage is 15 in., while its minimum sensitive length is ¼ in. A non-recording industrial beta gage and a laboratory-model beta gage are also available.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T194.

New Box Cuts Shipping Costs, Damage

Bulk or packaged shipments of textiles may now be shipped safely at a substantial savings in materials costs and tare weight in a new type corrugated box, according to The Hinde & Dauch Paper Co., Sandusky, Ohio, producers of the box. The new type shipping box is known as the Belsinger box.

The H & D Belsinger box gets its strength from the multi-wall construction in which the box can be designed with corrugations running in the desired directions for maximum compression strength. Ends, sides, and points of greatest strain of the box are given extra reinforcement.

CARPET AND OTHER TEXTILE MILLS are using this new-type shipping box.

Several models of the H & D Belsinger box are available. Construction varies with the type, size, and weight of the product to be shipped. An interesting feature of another model is an "access door" which drops open to permit easy packing and unpacking.

Basic construction features of H & D Belsinger boxes are generally the same, with slight variations in assembly operations. The boxes consist of a heavy, full-length inner liner of corrugated board, over which two half liners are fitted; each half liner is capped with reinforcing "trays." A simple, straight arm stitcher is all that is required to set up the box. After packing, closure is made with metal strapping.

In addition to freight savings and savings made in the cost of the box, Hinde & Dauch points out that the re-use possibilities of the Belsinger box further contribute to over-all economy. Other advantages of this type box over conventional "heavy-load" boxes are savings in labor, ease of assembly, and convenient storage in a minimum of space. Gummed-tape sealing makes the box dustproof.

To request further information please use the card on page C of the Reader-Service dept.; refer to T-87.

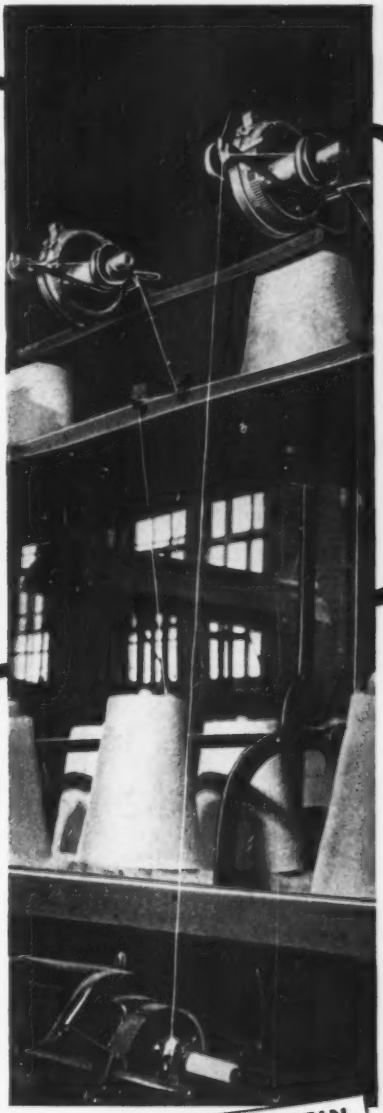
Bleaching Development Assures Cleaner Cloth

An improvement in the Becco continuous-bleaching process is being made available to the textile industry by the Buffalo Electro-Chemical Co., Inc., Buffalo, N. Y., on a royalty-free basis.

Described in U. S. patent No. 2,391,905, the improvement involves introduction of hot water into the curved section of the J-boxes. Hot water acts as a lubricant for cloth and helps to maintain a clean stainless-steel surface. Benefits are said to include easier washing, cleaner cloth, and freer passage of the cloth through the J-box.

The system has been field-tested and

"With the KIDDE TENSION COMPENSATORS we get far more uniform quills"



When this progressive silk mill installed *Kidde* Tension Compensators on 200 of its spindles, a definite improvement in quill uniformity was noted. And every textile man knows how important *that* is!

This is just one among many large-scale installations in which *Kidde* Tension Compensators have convincingly proved their value—in such operations as quill winding, warping, dye package winding, filling winding, plying. If the job calls for extremely accurate tensioning, it's a job for the *Kidde* Tension Compensator!

Just set this precision device to the tension you want, from 120 grams down to 6—to as low as 4 grams under suitable conditions. The Compensator *automatically* maintains the correct value—takes the variables out of yarn tensioning!

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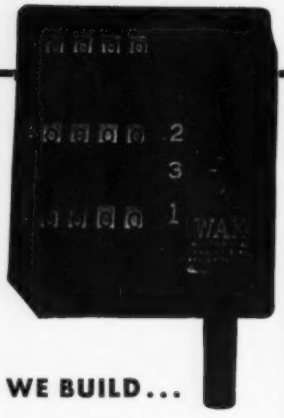

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- ★ Special Counters

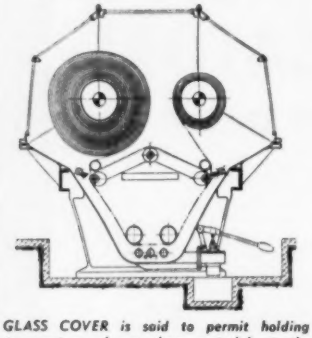
*T. M. Reg. U. S. Pat. Office

WAK
INDUSTRIES
CHARLOTTE N. C.

is said to be in regular use on a number of continuous-bleaching ranges.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-91.

Italian Tensionless Jig Employs a Glass Cover



GLASS COVER is said to permit holding temperature of wound-up material at the boiling point.

An inclosed dye jig, said to be tensionless in operation, made by Mezzera Soc. per Az., of Milan, Italy, is now available through Ernest L. Frankl Associates, 22 E. 40th St., New York, N. Y. Features of the machine are gradual starting, a differential device which permits dyeing at constant speed without buildup of tension, and a safety-glass cover. The cover is said to maintain uniform cloth temperature throughout the machine, and to be especially useful in dyeing nylon fabrics. Temperature of the wound-up material can be maintained at the boiling point, the manufacturer states.

The machine is said to be suitable for all types of fabric, but especially those which are delicate.

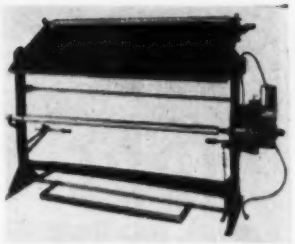
To request further information, please use the card on page C of the Reader-Service dept.; refer to T-98.

Examining Machine Has Welded-Steel Frame

A new cloth-measuring, winding, and examining machine with an all-steel frame said to cost considerably less than comparable machines is being made by Liberty Machine Co., Paterson, N. J.

The machine uses Fafnir ball bearings throughout. A Reeves variable-speed drive gives a 3-to-1 variation at any desired speed. A Dodge ball bearing clutch with foot control frees hands for examining and picking.

Examining boards are plastic-impregnated and are designed to last the life of the machine. A Veeder-Root



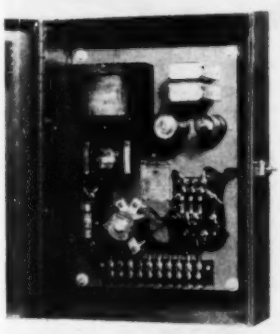
LOW COST, PRECISION CONSTRUCTION are features of this new cloth-inspecting unit.

clock for measuring is driven directly from the winding drum.

Two models are available: L-10 for weaving plants, and L-10-A for dyers, printers, and converters. On model L-10, cloth is wound on a tapered beam to facilitate removal. The machine will take rolls with either square or round holes. Model L-10-A can be used for winding from shell to shell, shell to tube, or tube to tube. This model features the all-steel Nevaslip tube holder.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-86.

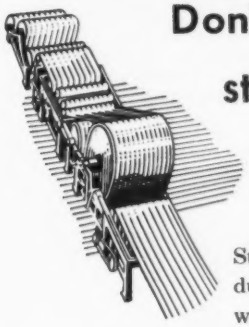
Beam Let-Off Drive Provides Proper Tension



BEAM LET-OFF DRIVE CONTROL equipment is shown here with the cabinet door open.

A new beam let-off-drive control to provide tension regulation for low-power winding or unwinding applications in the textile industry has been designed by Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa. The drive is designed principally for applications in the textile industry, for beam let-off or cloth wind-up on warp-knitting machines, or for looms of any type. The drive may also be used on bobbin winders and similar applications.

The drive is actuated by dancer con-



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Staley specializes in supplying the textile industry with the *right* starch for weavability, weight and finish. "Eclipse" Mill Thin Boiling Starches are standardized within very close fluidity limits. Staley offers a complete range of thin boiling starches to meet your own particular needs.

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Try the Travelers with a purpose . . . Try the Travelers that are harder, have smoother durability . . . the Travelers that from start to finish are closely inspected to make certain they earn the stamp "Dary Processed".

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Crawford Rhymer, P. O. Box 2261, Greenville, S. C.

tact signals from the material being wound or unwound. The drive-motor speed varies over a wide range to maintain tension regardless of material build up or operating speed.

A d.c. dynamic-braking scheme, providing rapid stopping to reduce cloth defects, is normally included. For this purpose, a contact is interlocked with the main drive of the machine, stop-motion relay, or other similar contacts.

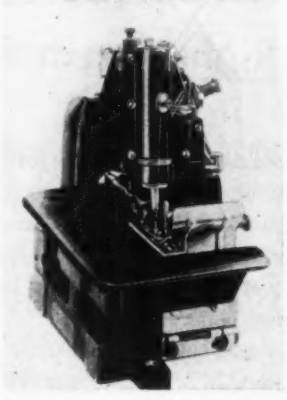
Beam let-off drives are designed for operation from a 60-cycle, single-phase, 115-v. a.c. power supply. For operation on 230/400/575 v., a transformer is supplied to step the voltage down to the operating voltage of the motor.

To request further information, please use the card on pageC of the Reader-Service dept.; refer to T-85.

Overedger Produces Uniform, Undistorted Seam

Development of a highly perfected form of overedging, designated as the Purl-Rite finish, has been announced by Union Special Machine Co., 400 N. Franklin St., Chicago, Ill. The development will be of particular significance in the finishing of knitted underwear, the company states.

The outstanding improvement from an appearance standpoint, and noticeable immediately, according to the company, is the uniformity of stitches, imparting beauty and quality to seams. Of equal importance is the absence of distortion in seaming curved sections, or in going from one thickness to another, or in crossing seams. The stitch remains constant, and the purl lies uniformly along the edge.



OVEREDGER for producing the improved Purl-Rite finish is available in Union Special Style 39200 AC machines.

UNIFORMITY OF STITCH is maintained over varying thicknesses of material by the new overedger.

Behind these results is a series of mechanical improvements that are of equal importance from the standpoint of production and performance:

1. Freedom from stitch distortion as a result of an entirely new method of thread control and improved design of stitch tongue.
2. Additional elasticity in chain due to new thread control, and also to redesign of presser foot and throat plate tongue.
3. Easier threading.
4. Ready accessibility of all thread controls.
5. Generally improved sewing conditions due to smoother, easier thread handling.
6. No sacrifice in machine speed or production.
7. New thread control compensates for irregularities in thread.

Initially, the Purl-Rite finish is being made available in Union Special Style 39200 AC overedging machines which are specially designed for seaming the lighter weights of knitted undergarments with seam Type 504-SSa-1. Additional styles in Class 39200 are also scheduled to receive the new parts. In outward appearance, the new Thirty-Nine-Two's closely resemble their predecessors; all of the improvements have been accomplished through a new thread control, redesign of sewing parts, and certain necessary changes in timing and adjustment.

To request further information, please use the card on page C of the Reader-Service dept; refer to T-99.

Portable Sewing Machine Designed for Finishers

A new type-J piece-end sewing machine for use wherever it is necessary to sew a temporary seam for continuous processing has been developed by William Birch (Engineers) Ltd., of England, according to the American sales agency, Trumeter Co., 1265 Broadway, New York, N. Y.

This machine will sew wet or dry fabrics up to a combined thickness of $\frac{3}{8}$ in. Three lengths of chain stitch are provided: $\frac{1}{16}$, $\frac{1}{8}$, and $\frac{3}{8}$ in. long. The length of the stitch can be altered instantly with a small finger lever.

The cloth feed is positive by means of a rotary feed wheel fitted with pins. The wheel can be rotated forward to

Announcing PARNOL

More than just a highly effective detergent—a surface-active agent of exceptional merit as well.

In the dyeing and finishing of textiles, PARNOL is already proving the value of its unique combination of exceptional wetting properties and high detergent characteristics. It is an anionic dodecyl-toluene sulfonate whose molecular structure maintains that hydrophilic-lipophilic balance so necessary for efficient, economical processing of materials.

PARNOL is a spray-dried, free-flowing, non-hygroscopic white powder with little or no odor, stable in acid or alkali solutions of percentages encountered in textile manufacturing. It produces exceptionally high and lasting foam in either hard or soft water.

As the typical analysis shows, PARNOL has an unusually high percentage of active matter. Its effectiveness, both as a wetting agent and as a detergent, is shown by the Draves and the Ross-Miles tests, given below. Its detergent powers in hard and soft water are further evidenced by reflectance measurements in Launderometer tests.

Full information and samples will be sent on request.

A TYPICAL ANALYSIS

Active Matter	41.25% (Dry basis)
Inorganic Salts (principally Na_2SO_4)	58.20% (Dry basis)
Unsulfonated Material	0.55% (Dry basis)
Moisture	1.70%
pH (1% solution)	7.50%

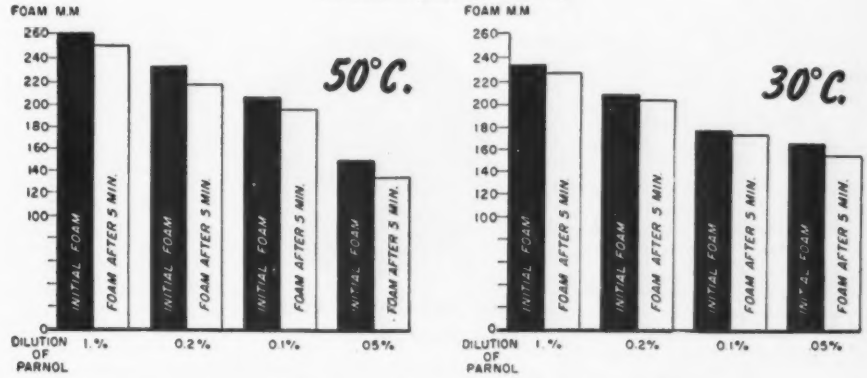
DRAVES WETTING TEST

TAP WATER — (HARDNESS 90 P. P. M.)

DILUTION	TIME
0.25%	6 sec.
0.20%	10 sec.
0.15%	12 sec.
0.10%	15 sec.

ROSS-MILES TEST

TAP WATER — (HARDNESS 90 P. P. M.)



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bring the cloth to the needle without turning the handle.

Working space under the top arm is clear, free from any working parts. The cloth is removed from the pins, gradually but positively, with long stainless-steel strippers. A presser foot is fitted with adjustable pressure to suit varying grades of cloth. All parts in contact with the cloth are of stainless steel.

Working parts are inclosed to exclude dirt and moisture, but all working parts are quickly accessible by removing the front plate.

The only adjustment provided on the machine is for correct relationship between the needle and the looper. All other parts are timed and fixed on assembly to give ideal working conditions. Replacement parts will retain this correct timing.

The portable stand has a very low center of gravity. Solid rubber tires are fitted with metal slide plates, and the tire cannot shear off, as the plate bolts go through the rubber tires. Tires are easily replaced when worn.

Motor-driven machines are available with the same type of stand and a foot-operated lever to operate a mechanical clutch fitted on the motor which runs continuously when in use. The motor is not, therefore, being constantly started electrically under load; this is said to insure long life for the motor.

To request further information, please use page C in the Reader Service Department; refer to T-24.

DYES & CHEMICALS

New Raw-Nylon Warp Size Announced

A new resin size, Tyze, for slashing continuous-filament-nylon warps has been developed by the Ammonia Dept., E. I. duPont de Nemours & Co., Inc., Wilmington 98, Del. Tyze is said to be a white, free-flowing, essentially dustless powder. When applied along with a softener, Tyze is said to form a tough, flexible, strongly adhering, non-flaking film on nylon warp yarns. The size is readily water-soluble, easy to apply, and easy to remove, the manufacturer claims. Tyze is said to be used to best advantage when applied to raw nylon.

Use of not over 9% of Tyze in the size solution is recommended. Viscosity of the Tyze solution increases with a rise in temperature and with an increase in size content.

Tyze solutions are acid (pH 3.8 to 4.0). Stainless steel and monel metal are not affected nor is saran-lined or polyethylene pipe. All evidence to date is said to indicate that dry Tyze is not corrosive to weaving equipment.

To request further information, please use the card on page C of the Reader-Service Dept.; refer to D-20.

Water Repellent Especially for Nylon

Research work by Dow Corning Corp., Midland, Mich., on a better water-repellent finish for nylon has resulted in development of DeCetex 104. This new silicone product is especially designed to give durable water repellency to nylon, cellulose acetate (Estron), and fabrics containing mixtures of these fibers. The new product is said to offer users exceptional durability, ease of application, improved fabric quality, and reasonable cost.

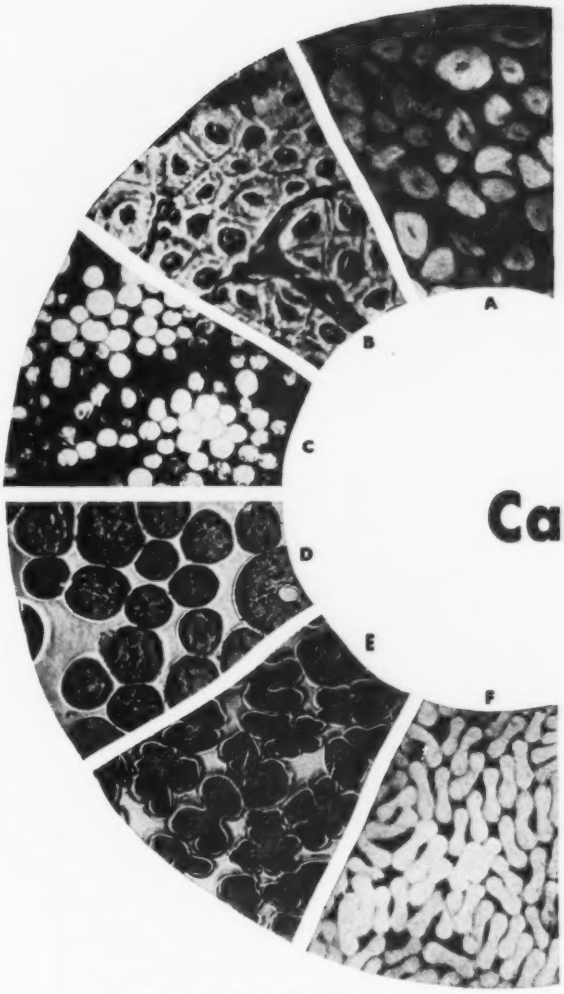
DeCetex 104 imparts to each filament a tightly bonded, water-repellant silicone surface said to be resistant to oxidation, soaps, dry-cleaning solvents, and wet mechanical action. DeCetex 104-treated nylon fabrics have an initial spray rating of 100. They retain a rating of 90 after as many as five dry cleanings, the manufacturer states.

DeCetex 104-treated nylon fabrics are almost as resistant to standard laundering tests as they are to dry cleaning. It is claimed that after two 2-hr. wash tests, most samples retain a spray rating of 80 or better.

Dynamic absorption values for DeCetex 104-treated nylon fabrics after 20 min. are said to be about 20% below the initial rating.

DeCetex 104 is easily applied from a dilute oil-in-water emulsion in conventional equipment such as a padder or quetsch. Only a 2 to 3% pick-up is required. The fabric is then dried on any standard equipment such as dry cans, dry boxes, or tenter frames. The dry fabric is then heated for 3 to 5 min. at 300 to 320° F. to develop maximum water repellency and durability. The silicone finish can also be cured in 10 to 30 sec. at 400 to 460° F. Curing DeCetex 104 and thermosetting the nylon fibers can therefore be accomplished in a single operation.

DeCetex 104-treated nylon is said to have a notably soft, smooth, full and almost silky hand. When properly



Photomicrographs—Textile Fiber Atlas

Can you rate as a fiber expert?

You're an expert if you guessed all six. No matter how many of these fibers you named correctly, they're all vital to Stein Hall. Each of these fibers and many more are continually under the scrutiny of our laboratory technicians.

For 83 years, Stein Hall has serviced the textile industry by developing the finest products for warp sizing, printing, and finishing fabrics made from these and other fibers.

Continuous study...endless testing under expert supervision in controlled laboratories means a more efficient operation in your plant.

Trained salesmen will tell you about Stein Hall textile products. Laboratory specialists will back them up. For a textile problem, call on Stein Hall.

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DREAMS *Come True!*

This Wildman machine is the joy of every hosiery mill production superintendent. It is shipped fully assembled and goes to work producing stockings a few hours after reaching the plant. It takes any gauge and knits the complete stocking, perfect from top to toe, in one continuous operation. Is absolutely impervious to climate or atmosphere. There are a lot more good things we'd like to tell you about this machine. May we?

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SILKS — COTTONS

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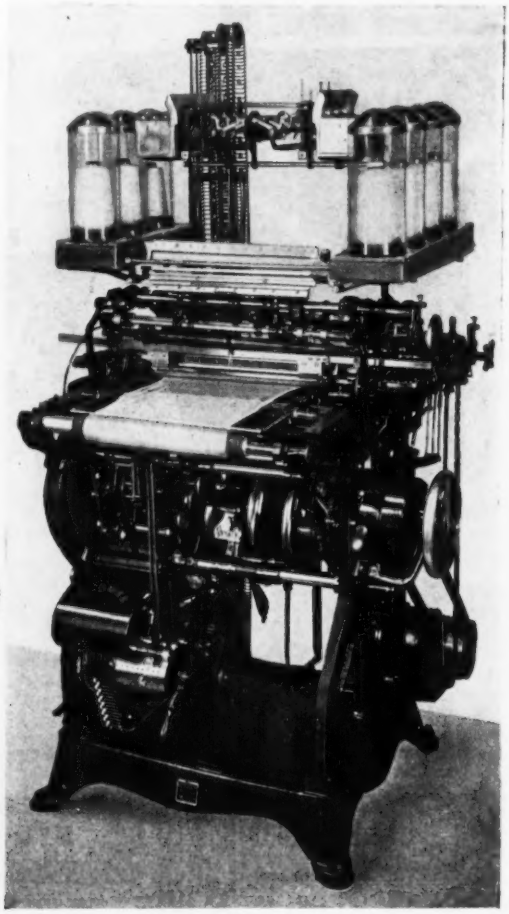
ANY WHERE

The **WILDMAN**
Single-head, single-unit full-fashioned
HOSIERY
Machine



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No. 10 of a series

PUBLISHED BY AMERICAN Cyanamid COMPANY / CALCO CHEMICAL DIVISION
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ADDED BRIGHTNESS WITH FLUORESCENT WHITES

Calcofluor* White B and Calcofluor White 3R, now available, are water soluble compounds which display a blue or blue-white fluorescence when applied to cellulosic materials. These compounds transform part of the invisible ultra-violet rays to visible light rays, which, when added to the normal visible light rays, give added brightness to a white fabric.

Calcofluor White B and Calcofluor White 3R are substantive on cellulosic fibers, and are suggested for production of better whites or for whiter grounds in prints.

Consult your Calco representative for information and samples of the Calcofluor Whites.

New Printing Powders for Cottons

Calconyl* Powders are the powder form of Calconyl Double Solution, recently announced. These powders are stabilized azoic dyes for printing and are from 2¼ to 2½ times the concentration of Calconyl Double Solutions, highly recommended for mills preferring to use powders.

Calconyl Powders are suitable especially for printing on cotton to produce full shades with good fastness to light, washing, dry cleaning, hot pressing and perspiration. They are adapted to printing dress goods, table cloths, handkerchiefs and towels.

Calconyl Powders offer great ease in handling and a high degree of stability in storage.

Calconyl Yellow 2GR Powder
Calconyl Yellow G Powder
Calconyl Golden Yellow R Powder
Calconyl Scarlet R Powder
Calconyl Red G Powder
Calconyl Red R Powder

Dyeing U. S. Army Necktie Cloth

The United States Army necktie cloth dyed in the dark shade of O.D. 51 is made up with a cotton warp and a mohair filling. The cotton is being dyed in the raw-stock form in some mills, and in yarn form in package machines by other suppliers. Vat dyes are specified for the cotton, and chrome dyes are being used to obtain the required fastness properties when cross dyeing the mohair in the finished piece.

The pieces containing the vat dyed warp are usually dyed on the jig in the flat or open width to retain the required picks per inch in the finished cloth. The cutter thus obtains the maximum amount of cloth for ties and curling of the cut necktie is prevented.

Government specifications require good fastness to light, laundering, perspiration and crocking.

The following Calcochrome* dyes and Vat dyes produce successful runs on this shade.

Calcochrome Dyes

Calcochrome Brown EB
Calcochrome Alizarine Blue Black B
Calcochrome Yellow G

Vat Dyes

Calcosol* Olive Green BN Double Paste
Calcoloid* Black BBD Double Paste
Calcosol Brown RR Single Paste
Calcosol Khaki G Paste

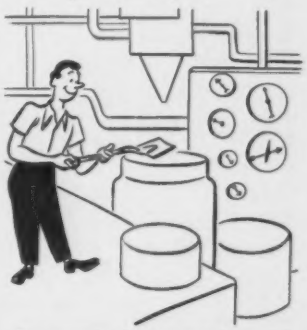
Suggested formulae can be supplied upon request.

*TRADEMARK

FOR THE TEXTILE BOOKSHELF

Determination of the Solubility of Dyes (Calco Technical Bulletin No. 801)—Discusses the rate of solution, the solubility and methods of increasing the solubility of dyes in many fields of application.

Studies of Nylon Dyeing: Effect of Dyeing Procedures (Calco Technical Bulletin No. 798)—This study endeavors to arrange the laboratory experiments and presentation of the data in a manner which will reveal the progress of the dyeing action that will be most helpful to the dyer.



Five pounds of raw material are used to produce one pound of Calco dye.

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Puts your sales on a cash basis
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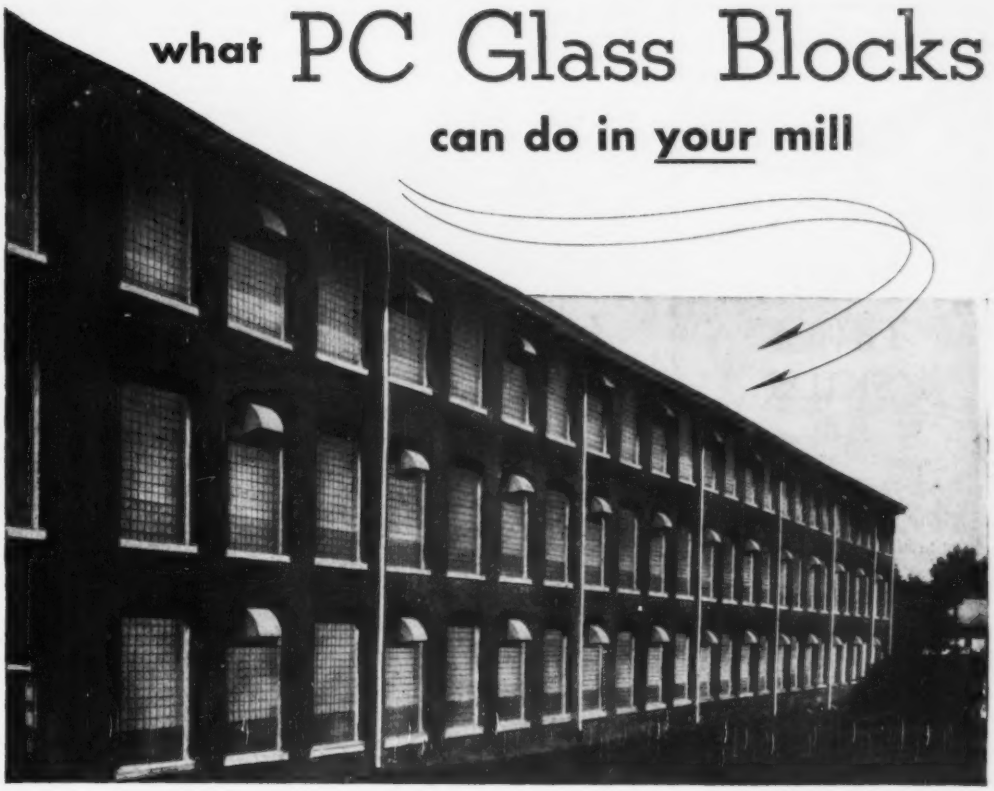
what PC Glass Blocks can do in your mill



● **AN EXAMPLE** of practical modernization with PC Glass Blocks may be seen in this view of the Marion Manufacturing Company's mill building, at Marion, N. C. Here, glass blocks play an important part in helping to maintain the efficiency of the humidifying system.

Photograph courtesy, American Moistening Co.

REPLACING old, worn out, or rotted sash in your buildings with PC Glass Blocks offers many advantages. For example, PC Glass Blocks help to regulate temperature and humidity because they have more than twice the insulating value of single-glazing. Thus, they assist in maintaining product perfection and uniformity; effectively protect against variations in temperature and humidity which retard production.

But that is not all. PC Glass Blocks improve the plant's appearance, also; better the working conditions; bring actual money-savings. Because, PC Glass Blocks rarely, if ever, need repairs or replacement. There is no expensive washing of small, individual panes; no painting. They reduce heating and air-conditioning costs. In fact, mill operators report that PC Glass Block installations have paid for themselves through the savings effected. Moreover, through their better light diffusion, they afford workers greater eye-comfort; help to increase their efficiency. They provide effective sound insulation; shut out unwanted views; prevent the infiltration of dust and grit.

Why not take advantage of these benefits in your mill operations? Consult with our specialists. They will be pleased to advise you, without obligation on your part. Meanwhile, send for our free booklet on the use of PC Glass Blocks in mills and industrial plants.

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Dept. M-99, 307 Fourth Avenue
Pittsburgh 22, Pa.

Without obligation on my part, please send me your FREE booklets on PC Glass Blocks for all kinds of construction.

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City.....State.....

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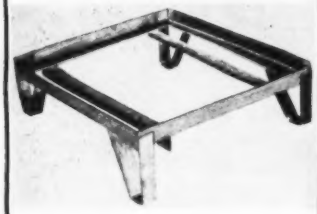
Distributed by Pittsburgh Plate Glass Company; by W. P. Fuller & Co. on the Pacific Coast, and by Hobbs Glass Ltd. in Canada



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HONESDALE, PA.
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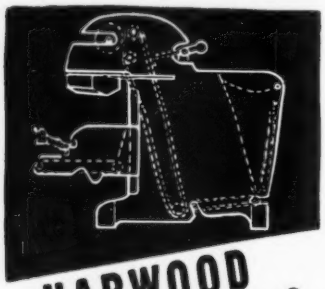

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Geo. S. HARWOOD & Son

Specialists in Textile Feeding Machinery Since 1863

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treated with DeCetex 104, nylon shows no more mark-off than untreated fabric, the company states. There is no apparent change in the color or porosity of the fabric due to the silicone finish, it is claimed.

DeCetex 104 is a high-polymeric Dow Corning silicone product which contains no corrosive chemicals. The product is odorless and inert physiologically. There are no hazards or unpleasant odors involved in applying DeCetex 104, the company states; and there is no need for washing or neutralizing after the fabric is treated.

Present indications are that the added advantages of DeCetex 104-treated fabrics can be had at a cost comparable to that of fabrics treated with other durable water repellents.

To request further information, please use the card on page C of the Reader-Service dept.; refer to D-18.

Plastisols Used Without Top Coat

A new series of colored vinyl plastisols for textile coating which can be used without a top coat has been developed by The Watson-Standard Co., 225 Galveston Ave., Pittsburgh 30, Pa. The plastisols are 100% solids which prevent the loss of solvent in the coating.

Textiles coated with the new Watson-Standard plastisols are said to be easily handled and to have good light stability, dry feeling, good toughness, and abrasion resistance. Easy to work with, the products provide economical production, the manufacturer states.

To request further information, please use the card on page C of the Reader-Service dept.; refer to D-19.

Book Reviews

Classified Data On Polymer Bases

MONOMERS (Section I), by E. R. Blount, W. P. Hohenstein, and H. Mark; Interscience Publishers, Inc., 215 Fourth Ave., New York 3; 370 pages, looseleaf bound, lithographed, $7.50.

The first in a series of data and procedures on the basic materials for the synthesis of fibers, plastics, and rubbers, this book should be of value to those interested in the preparation and collection of polymers. Many simple organic molecules, monomers, have already been described in standard texts; this book groups and considers them and others whose numerical data and exact procedures for purification, storing, and handling are not so generally accessible. Acrylonitrile, butadiene, isobutylene, isoprene, methyl methacrylate, styrene, vinyl acetate, and vinyl chloride are among the substances considered and classified.

Handy Textile Guide For Men on the Road

DAVISON'S TEXTILE DIRECTORY FOR EXECUTIVES AND SALESMEN, Davison Publishing Co., Ridgewood, N. J.; cloth, 450 pages, $4.50.

The object of the publisher in presenting this book is to furnish a condensation of the essential information contained in the larger directory. This handy, pocket-size guide, 5¼x3¾ in. in size, is printed on thin paper and is only ½ in. thick. A durable, flexible binding with an inside-cover pocket to hold a complete set of textile maps makes it easy to carry this manual in coat pocket or brief case.

In all, 9,000 separate mills and dyers in the United States and Canada are reported in detail. They are arranged alphabetically under each city or town for quick reference, with executives, buyers, superintendents, machines, goods made, and other data included.

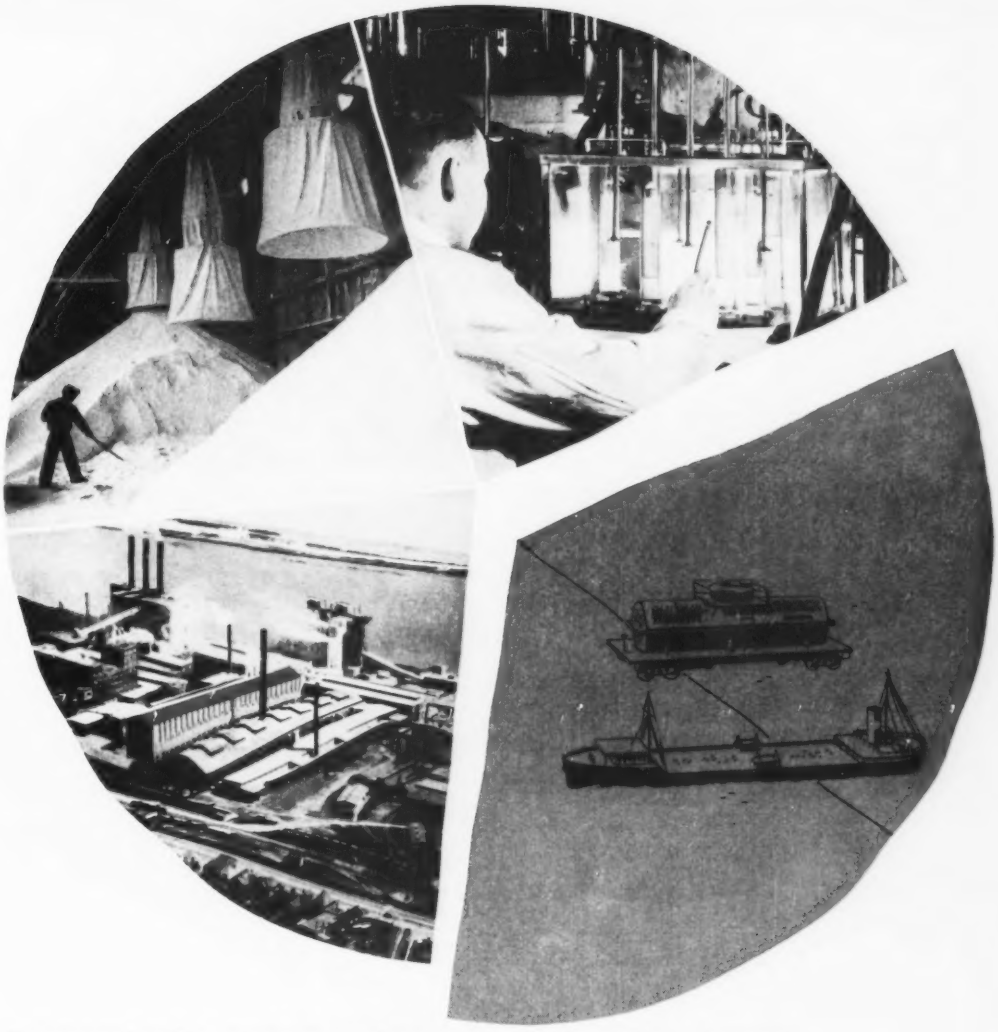
Latest Information On Import Duties

CUSTOM HOUSE GUIDE (87th year) 1949 Edition, Custom House, New York 4; 1,600 pages, $25 plus postage (includes monthly bulletin).

Drastically revised for the purpose of giving foreign traders the very latest information easily, this well-known guide is the only publication in the world including the new U. S. import duties as provided in the General Agreement on Tariffs and Trade (Geneva). Rates appear against each of the 30,000 commodities, including textiles, in the alphabetical index.

Practical Experience in Community Relations

OPEN HOUSE, digested from actual plant experience by Lawrence McCracken, Textile Committee on Public Relations, 551 Fifth Ave., New York 17; paper, 20 pages, no charge.



Economical transportation completes the picture

As a user of basic chemicals, it will pay you to consider these facts:

Wyandotte is located at the heart of the Great Lakes waterways. Company-owned sources of raw materials — coal, limestone and salt — are close at hand. Recently expanded plant facilities, plus diligent research and 59 years' experience in the field, all assure you of a steady, dependable supply of chemicals — today and tomorrow.

Because of its location, Wyandotte can ship to you either by rail or by water. This company is in a unique position to send caustic soda, soda ash and other chemicals *via both* these forms of transportation.

Wyandotte will be glad to consult with you on your requirements. For *complete* service in chemicals, get in touch with your nearest Wyandotte Representative.

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SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE
CHLORINE • HYDROGEN • DRY ICE
GLYCOLS • SYNTHETIC DETERGENTS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
PROPYLENE DICHLORIDE
AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

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For the safe and easy handling of acids and other liquids in carboys and barrels, you can't beat this Pneumatic Pump. The stream of acid is smooth and absolutely free from spurts. . . . There are "less fumes." . . . Easily transferred from one container to another. . . . Flow of liquid can be stopped instantly. Flow of approximately 2 or 3 gallons per minute is obtained.

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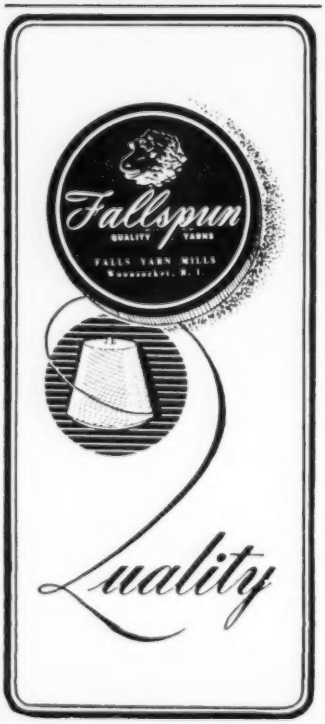


ELIMINATION OF SPOILAGE has resulted from installation of 60 tension compensators in mill of Frick & Eaton.

TENSION COMPENSATOR
Cuts Rayon Yarn Stretching

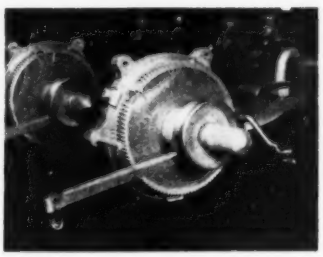
HIGHLIGHTS: *Cop spoilage reduced to less than 1% at Frick and Eaton mill—Filling shiners virtually eliminated—Device can be set to any desired tension—Closer figuring on winding-production potential results in reduced costs.*

THE REDUCTION OF SPOILAGE of synthetic filament yarns to less than one percent through use of a new tension device in quill-winding operations is claimed by Frick & Eaton, contract weavers of Paterson, N. J. This reduction of breakage and quill spoilage has been accomplished, along with a speed-up in production and virtual elimination of shiners in rayon taffeta fabrics, the company says, through the use of tension compensators, designed and manufactured by the textile division of Walter Kidde & Co., Inc.

A ball-bearing twin-disk device, the compensator is said by mill officials to take the variables out of yarn tensioning. It utilizes the yarn itself to control the disk pressure, and employs a spring torque arm which can be set permanently to any desired tension from 10 to 120 grams. Once the dial is locked in position, the resultant tension is reported to remain constant—regardless of the type of yarn, coefficient of yarn friction, yarn speed, or normal changes in atmospheric conditions.

Sixty tension compensators have been installed on Frick & Eaton quillers to date. Savings in production time and lowered cost are reported in the virtual elimination of spoilage in quilling operations, which spoilage formerly made necessary the purchase of additional yarn before the firm could fill the order.

Easily installed on a simple bracket, and adaptable to various types of input guides, the tension compensator is said to be highly satisfactory in other textile operations, such as warping, package winding, and plying.



NUMBERED DIAL *on compensator permits quick tension adjustment, accomplished by loosening dial-locking screw, turning to the right number and re-locking screw.*

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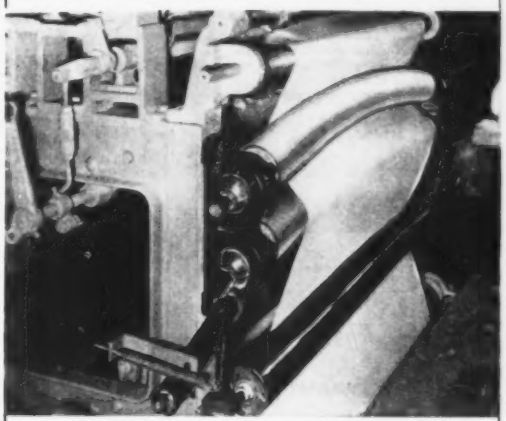
Cut out CLOTH ROOM S-L-O-W-D-O-W-N-S

Prevent Cloth Damage on Shearing Machines with

Mount Hope **SLACK SELVAGE ELIMINATOR**

Cloth Room men report, "New Mount Hope unit with two expanders and pivoted roll controls selvage slack—eliminates cut selvages on shearing machines".



Installation of Mount Hope Slack Selvage Eliminator on shearing machines. Courtesy of Woodside Mills, Greenville, S. C.

The above illustration shows one of the cloth room uses of Mount Hope free wheeling Expanders. This new Mount Hope Slack Selvage Eliminator is mounted on the entrance to shearing machine.

Wherever there's a cloth wrinkling and spreading problem, there's a Mount Hope Expander installation to fit your requirements. Avoid costly slowdowns and spoilage due to wrinkles and slack selvages. Speed up your Cloth Room operation. A Mount Hope Engineer will be glad to advise you upon request.

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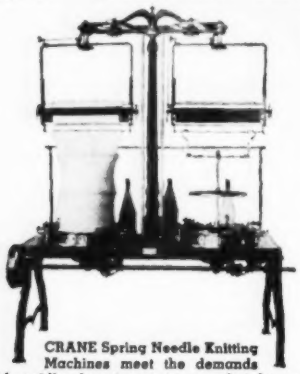
1870 **CRANE** 1949

SPRING NEEDLE KNITTING MACHINES

Speed - Quality - Low Cost



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

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VERSATILITY
WHEN YOU WANT
HIGH PRODUCTION

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U. S. ACME
MODERN THROWING
EQUIPMENT

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• TAPERED PACKAGE
DOUBLE DECK TWISTERS
four types to meet your specific requirement

U. S. TEXTILE MACHINE CO.
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SCRANTON 8, PENNA.

News of the month

Nylon Cloth Set Continuously. A new, continuous process for heat-setting nylon-tricot fabrics has been developed by Triangle Finishing Corp., Johnstown, N. Y. The operation is conducted at approximately 450° F. during a few seconds of exposure. Combustion gases heat the tricot fabric while it is tentered at full width in a machine built by Triangle technicians. Finished fabric is marketed as "Trianized." All the nylon tricot from A-Q Mills (Philip Wick, selling agent) is so processed. Trianized fabric can show a gain in yardage during the setting operation; the gain can be enough to offset the total finishing cost. Setting is performed between initial scouring and the final scouring or the dyeing operation. Process can be applicable to woven nylon fabric and nylon laces.

Improved Non-Run Hose. A 15-denier nylon stocking that will not run beyond one stitch has been developed for fall marketing by Howard Hosiery Co., Inc. The stocking resembles very closely the conventionally knitted type in both stitch appearance and sheerness, but has a unique patented loop formation. While constructed of locked stitches, it is said to be the closest thing to a stocking knitted on a full-fashioned machine without a non-run attachment that has been developed.

Linseed Fiber in Britain. Fiber produced from linseed straw can be spun as a textile yarn, according to the Department of Scientific and Industrial Research in London. Both the long-line fiber and the shorter tow have been spun successfully on existing jute machinery. The resulting yarn has a strength compared with jute yarns of nearly 75%. Jute, all of which has to be imported, now costs five times as much as it did before the war; and it is hoped the linseed fiber can be produced at a cost which compares favorably with it. The fiber is already being used for the backing of carpets. The investigation of what to do with

Textile Calendar

Scottish Industries Exhibition, Kelvin Hall, Glasgow, Scotland, Sept. 1 to 17, 1949.

Levante Fair, Bari, Italy, Sept. 4 to 21, 1949.

AATCC, South Central Sect., Lookout Mountain Hotel, Chattanooga, Tenn., Sept. 9 and 10, 1949.

Southern Hosiery Manufacturers Assn., annual meeting, Hotel Roanoke, Roanoke, Va., Sept. 9 and 10, 1949.

AATCC, Northern New England Sect., Andover Country Club, Andover, Mass., Sept. 16, 1949.

AATCC, Philadelphia Sect., Kugler's, Philadelphia, Pa., Sept. 16, 1949.

International Wool Exhibit, Dorland House, London, England, starting Sept. 20, 1949.

NACM, 95th annual meeting, Marshall House, York Harbor, Maine, Sept. 22 and 23, 1949.

Textile Machinery Exhibition, Manchester, England, Oct. 12 to 22, 1949.

North Carolina Cotton Manufacturers' Association, annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 13 and 14, 1949.

American Association of Textile Chemists & Colorists, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., Oct. 13 to 15, 1949.

Carded Yarn Association, annual meeting, Sheraton-Bon Air Hotel, Augusta, Ga., Oct. 27 and 28, 1949.

Cotton-Textile Institute, annual meeting, New York, Nov. 3, 1949.

AATCC, Northern New England Sect., Lowell Textile Institute, Lowell, Mass., Nov. 4, 1949.

AATCC, Piedmont Sect., Charlotte Hotel, Charlotte, N. C., Nov. 5, 1949.

AATCC, Philadelphia Sect., Kugler's Philadelphia, Pa., Nov. 11, 1949.

Plant Maintenance Show, Auditorium, Cleveland, Ohio, Jan. 16 to 19, 1950.

National Cotton Council, annual meeting, Hotel Peabody, Memphis, Tenn., Jan. 23 to 25, 1950.

Southwest Air-Conditioning Exposition, State Fair Park, Dallas, Texas, Jan. 23 to 27, 1950.

ACMA, annual convention, Biltmore Hotel, Palm Beach, Fla., March 30 to April 1, 1950.

Carpet Institute, Carpet Fashion Opening, New York, April 17 to 27, 1950.

Knitting & Allied Crafts Exposition, sponsored by Underwear Institute and National Knitted Outerwear Assn., 71st Regiment Armory, New York, April 24 to 28, 1950.

National Assn. of Hosiery Mfrs., annual meeting, Claridge Hotel, Atlantic City, N. J., May 1, 1950.

American Textile Machinery Exhibition (and Allied Industries) sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J., May 8 to 12, 1950.

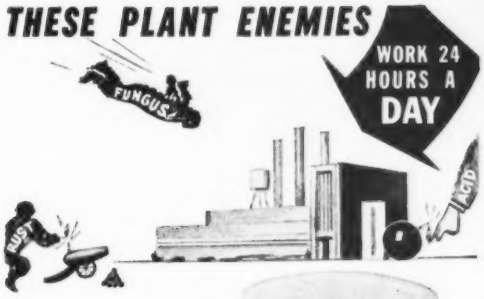
Cotton Manufacturers Assn. of South Carolina, annual meeting, Fort Sumter Hotel, Charleston, S. C., May 11 to 13, 1950.

National Materials Handling Exposition, International Amphitheatre, Chicago, Ill., June 12 to 16, 1950.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 2 to 7, 1950.

American Association of Textile Chemists & Colorists, annual meeting, Hotel Statler, Boston, Mass., Oct. 19 to 21, 1950.

THESE PLANT ENEMIES



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Read how DAMP-TEX ENAMEL will solve your problems. Then send for details of our No-Risk Trial Offer.

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Here are the new SERIES G BEAMS

with Improved Inside Supports and other construction improvements

— additional strength.
— stands stress of yarn better.
— truest running.
— withstands rougher handling.

Expressly designed to run on all new models of high speed warpers.

GK — COTTON
With Improved Cast-iron Inside Supports at ends, and three two-ply wood supports between.

GN — NYLON, SYNTHETIC
With five Improved Cast-iron Inside Supports as shown.

Also GR — RAYON, with Improved Cast-iron Inside Supports at ends, and seven two-ply wood supports between.

We have doubled the number of fastenings securing the staves to the supports, with self-tapping screws used at Improved Inside Supports. The barrel remains smoother, and the beam will withstand rough handling with heavy loads and remain true running.

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General offices — 156 River Road
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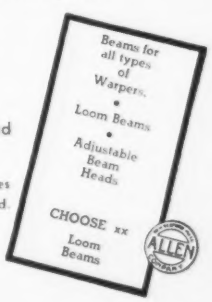

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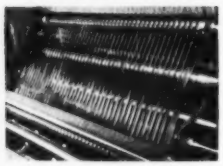

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200,000 tons of linseed straw waste in connection with the cutting down of imports was carried out with the cooperation of various research organizations, universities, and government departments.

Insect-Resistant Cotton Bags. An insect-repellent treatment consisting of pyrethrins or a mixture of pyrethrins and piperonyl butoxide—two insecticides that are of comparatively low toxicity to warm-blooded animals—has been developed for insect-proofing cotton bags. The chemicals can be applied to warp yarns at a practicable cost at the time these yarns receive the usual sizing treatment preparatory to weaving. Protection can be obtained even when bags are woven of treated warp yarns and untreated filling yarns. Developed by Dept. of Agriculture scientists, the treatment was worked out to a practical level during investigations financed, in part, by funds from the Research and Marketing Act of 1946. The effectiveness of the treatment has been confirmed by exposing both treated and untreated bags containing insect-free flour for long periods of time in a room containing thousands of hungry flour beetles and moths. In one such test, bags made of treated cloth admitted no insects during seven months, while an untreated bag let in 653 insects.

To Report on Flame-Proofing. "Flame-proofing Textiles" is the theme of a symposium to be held under the leadership of Dr. Gustavus J. Esselen, of Boston, head of the Esselen Research Corp. and chairman of the American Section of the Society of Chemical Industry, by the cellulose division of the society at its 116th National Meeting in Atlantic City, N. J., Sept. 18 to 23. The cellulose division will also cooperate with the National Research Council in a symposium on the degredation of cellulose, dealing with research along the line that has produced a bandage for internal use which can be absorbed by the body.

Profits, Sales, Inventories Down. In the first three months of 1949, the nation's textile manufacturing corporations made $113,000,000, after taxes —30% off from the $162,000,000 figure of the previous quarter (October through December, 1948), and about 55% below the $251,000,000 figure of the first quarter of 1948. Sales were down to a lesser degree. For the first quarter of this year, they totaled $2,149,000,000—9% off from the preceding quarter and about 25% off from the corresponding period of last year. Reason for greater loss of net income than sales: sales held fairly steady, but dealers cut down drastically on their orders to work off inventories. Costs stayed high (net operating expenses for the first three months were $1,956,000,000) — down only 7% from the last quarter of 1948 and 16% from the corresponding period in 1948. Reason: high fixed overhead resulted in high break-even points and kept costs from dropping as quickly as sales. A bright note in 1949 was that textile manufacturing corporations were in a substantially more liquid condition than they were at the end of 1948. The ratio of cash and government securities to current liabilities—a standard measure of corporate liquidity—rose from 87% to 90%. This rise reflects liquidation; it also means that business is better able to meet a further drop in sales, or a sudden flood of orders when one comes along later.

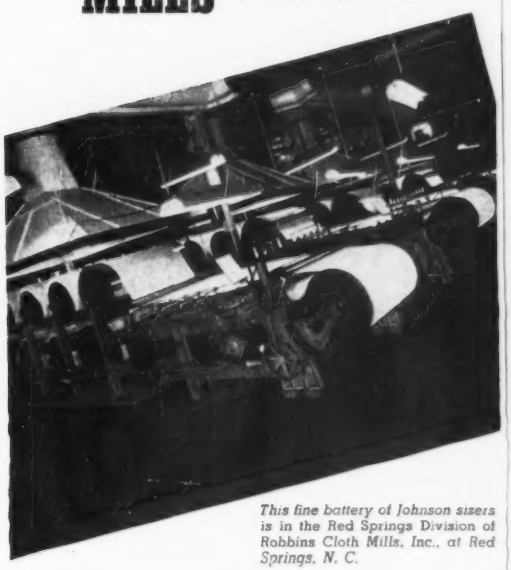
Knitting-Mill Equipment Expenditures. The 738 full-fashioned hosiery mills in the United States in 1947 spent $38,588,000 on new plants and equipment that year; while the 617 seamless hosiery mills spent $17,122,000, the 1,202 knit outerwear mills spent $5,727,000, and the 172 knit underwear mills spent $6,853,000. This information was made known by the Bureau of Census in its Census of Manufactures 1947. Southern mills led the way by 61% in over-all hosiery plant expenditures, while the Middle-Atlantic states dominated total outerwear-mill replacement expenditures and more than kept pace with the South in underwear-mill new plants and equipment.

Power Cost Differential. A cost differential of 0.12 of 1% and 3.7 mills per yard has been computed by Charles T. Main, Inc., of Boston, Mass., as the difference in the cost of woolen and worsted mill power in New England compared to the South Atlantic states in terms of percent of total value of product sold and cost per yard. The "typical mill" included 11 sets of cards, 63 broad looms, and 2,000 hr. per shift per year; with a peak load of 80% of connected motor load (410 kw) and an average load of 60% (307 kw). A similar computation for the power costs of "a typical cotton mill" (89,000 spindles and 2,036 looms) showed a differential in New England of about ¾ of 1% and 1.5 mills per yd.

California Plans to Spin. A cotton-spinning plant will be established in

Acclaimed

BY LEADING MILLS EVERYWHERE



This fine battery of Johnson sizers is in the Red Springs Division of Robbins Cloth Mills, Inc., at Red Springs, N. C.

There are more Johnson Rayon Warp Sizers in use today in leading mills the world over than there are of all other types of sizers for synthetic warps combined.

—•—

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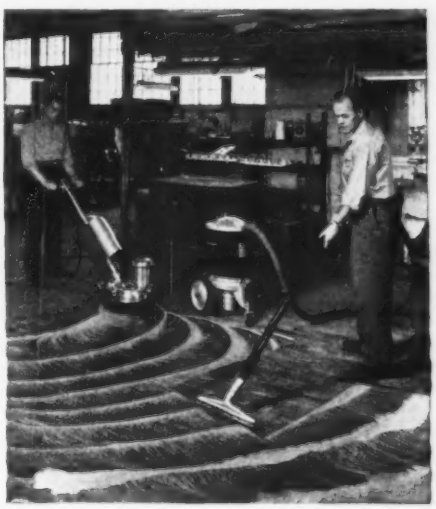
Keep your floors clean and keep maintenance costs down! Less spoilage of your product . . . higher worker production . . . less man-hours lost through injury . . . more sanitary . . . better appearance!



THE KENT FAST-CLEANING TEAM IN ACTION

Pictured on the left is the KENT Floor Scrubbing Machine for fast cleaning of all types of floors. On the right is the KENT Electric Mopper for picking up dirty scrub water quickly, completely—even out of cracks and crevices. Makes floors dry rapidly! It can be converted for picking up dry dirt too!

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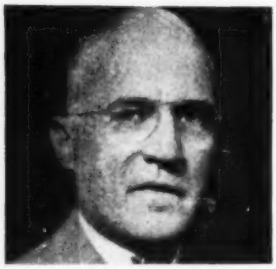
UNLOCKS TREASURE HOUSE . . .



. . . of Buying Information

Mr. S. H. Wheelock, shown above, is responsible for specifying, buying or otherwise influencing the purchase of textile machinery, equipment and supplies for the Stanley Woolen Co. of Uxbridge, Massachusetts.

For saving time in locating suppliers and comparing their products, he finds the McGRAW-HILL PRE-FILED TEXTILE CATALOGS invaluable as a "treasure house" of product data.

Mr. Wheelock says: "*We use TEXTILE CATALOGS frequently for reference and appreciate your sending it.*"

If PRE-FILED TEXTILE CATALOGS is not available for buying reference at your mill, write to McGRAW-HILL CATALOG SERVICE, 330 West 42nd Street, New York 18, N. Y.

The finest machines for every knitted fabric
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Write for descriptive leaflets of the Mellor Bromley Interlock and many other top line machines.
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NEWS OF THE MONTH

the San Joaquin valley of California if state industrial leaders have anything to say about it. A five-man committee recently surveyed possible markets, the labor supply, and the technical aspects of cotton textiles at Bakersfield. California already boasts an expanding apparel market of 800,000,000 yd. annually, and growing dyeing and finishing facilities.

A New Textile Publication. Journalistic standards of house organs have been given a boost through the creation of a new magazine, *Textile Editor*, slanted toward textile-mill house-organ editors and management. Published at Gainesville, Ga., by Eph Matthews, and edited by Tom Williams, editor of *The Mill Whistle* of Jefferson Mills, Inc., Jefferson, Ga., *Textile Editor* promises to be a medium for exchange of ideas among mill editors, ranging from suggestions for copy to use to attract greatest reader interest to the use of pictures and news items.

"Point Four" Discussed. The greatest opposition to the export of American know-how under President Truman's Point-4 program stems from the belief that to make our scientific and industrial knowledge available to the world means that there will be increased competition and the destruction of certain export markets, said the National Industrial Conference Board in a recent release. Since the primary interest of investors is the realization of a return on investment, executives contend that there must be "assurance that the capital can compete under fair practices and can be recovered in United States dollars in case of necessity, assurance that profits earned under fair competitive conditions can be remitted to the investor, and some assurance of stable currencies." A considerable number of the cooperators see tax exemption on foreign earnings as a prerequisite to the flow of American capital abroad. Some feel that the portions of the present tax law holding dividends from foreign investments to be wholly taxable, while permitting an 85% exemption on corporate dividends from other American enterprises, has not "given benefit to the American entrepreneur who is willing to risk capital in foreign development."

All Aboard for Britain. Mill executives and buyers from some 50 countries will attend the Textile Machinery Exhibition to be held at Belle Vue, Manchester, England, Oct. 12 to 22, according to trade circles. Equipment to be shown includes direct sliver-to-yarn spinning frame; automatic traveling-spindle filling and cone-winders; hot-air slashers; push-button-control looms; automatic warp-tying, drawing-in, denting, and drop-wire dropping machines; novel sample weaving machines; and a synthetic-resin-finishing machine.

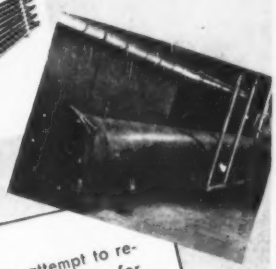
Indian Textile Machinery. Four firms in India at present manufacture spindles, rings, and ring frames. Total 1948 production of the latter was only 218 units. Of approximately 105,000,000 installed spindles in India, more than 90% were made in Britain. Eight Indian firms manufacture looms, and this includes several mills manufacturing for their own use. The combined 1948 output was 1,938 units. Industry and official estimates of machinery requirements differ slightly. The former see a need for only 250 to 550 ring frames and 4,400 looms per year; the latter sets needs at up to 4,000 ring frames and 12,000 looms per year. The conservative industry-given figure perhaps reflects an industry-wide coolness to cutting profits to pay for modernization.

New Pakistan Mills. First of six new cotton mills planned since Pakistan became a separate dominion in 1947 went into production in August. It is Valika Textile Mills Ltd., Karachi, with 25,000 spindles and 600 looms supplied by Platt Bros. Ltd., of Britain. Second new firm, Abbasi Textile Mills Ltd., will start production during the autumn in Bhawalpur State, with 31,800 spindles and 300 looms—mostly reconditioned British equipment. Four other new firms hope to begin work in 1950, with a combined total of 90,000 spindles. These six new mills will add about 150,000 spindles to Pakistan's pre-partition 107,000.

Egyptian Cotton Nears Peak. Egyptian cotton production may reach a record high of 1,975,000 bales (478 lb. average) for the 1949-50 season, according to a National Cotton Council survey. Relaxation of planting restrictions and greater availability of fertilizer are credited with bringing about the increase. Production in the future, however, is not seen as likely to expand significantly. Approximately 18% of the total cultivated land is now grown in cotton, as against a maximum of 20% before the war. Further acreage expansion will depend upon installation of new and improved irrigation facilities to utilize a larger part of the Nile water, three-quarters of which at present empties into the Mediterranean. Plans for new dams and reservoirs, are being proposed.

KELLEY RECLAIMERS

...Profit AS WELL AS Heat RECLAIMERS



If you are not making an attempt to reclaim heat in the spent dye liquor, for example, or are doing it with inadequate or antiquated equipment, it may pay you to get in touch with our engineering department.

It's purely a matter of economics . . . of sitting down with one of our representatives and doing a little figuring.

It would not be difficult to determine the reclaimable heat . . . how much it would cost to reclaim it . . . and how much saving there would be by installing the proper type and size Kelley Reclaimer, pit or closed type.

It is well to keep in mind that often it is "profit" . . . perhaps the profit . . . that can be reclaimed along with the heat units.

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"UNBRAKO" SQUARE HEAD SET SCREW WITH KNURLED CUP POINT

"UNBRAKO" SOCKET SET SCREW WITH KNURLED CUP POINT

UNBRAKO SELF-LOCKING SET SCREWS

. . . KNURLED ON THE POINT TO LOCK SECURELY

Once tightened up, "UNBRAKO" Set Screws, with the **knurled points**, defy vibration . . . "they won't shake loose" . . . and they can **be used over again almost indefinitely without losing any of their locking ability.**

. . . *And the Heads Won't Twist Off*

"UNBRAKO" Square Head Set Screws are made of a high-grade alloy steel, specially heat-treated, and it is practically impossible to twist their heads off—a most important feature—because if a head should twist off in a hard to get-at place—and they are aplenty—every maintenance man knows that it costs many times the price of the screw to remove it. Available in sizes ½" to 1", in a full range of lengths. Write for detailed information.

The Knurled Cup Point of the "UNBRAKO" Socket Set Screw makes it a Self-Locker—positively will not shake loose—even when subjected to extreme vibration. Useful for applications where square head set screws are not practical.

Other "UNBRAKO" Products include: Knurled Socket Head Cap Screws; Socket Head Stripper Bolts; **Precision-Ground** Dowel Pins; **Fully-Formed** Pressure Plugs.

Knurling of Socket Screws originated with "Unbrako" in 1934

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THE NEW WATER REPELLENT TREATMENT FOR NYLON

Water standing in almost perfect spheres on DeCetex 104 treated nylon rainwear is an indication of the remarkable water repellency of this new silicone water repellent treatment.

Exceptional durability promises to place DeCetex 104 at the top of the preferred water repellents listing. Nylon fabrics treated with DeCetex 104 retain their high initial resistance to wetting even after several dry cleanings or laundering.

Easily applied from your present padders or quetches, this new silicone water repellent treatment may be dried on any standard equipment including tenter frames or drying cans. Either an oil-in-water emulsion or a solvent solution of DeCetex 104 will give the desired pick-up. Curing DeCetex 104 and thermosetting nylon fibers can be accomplished in a single operation.

Improved quality is noticeable in DeCetex 104 treated fabrics. Nylon has a soft, smooth and full, almost silky, hand with no more mark-off than untreated fabrics. Washing or neutralizing is unnecessary after DeCetex 104 treatment because this odorless Dow Corning Silicone contains no corrosive chemicals and is inert physiologically.

DeCetex 104 is especially designed to give durable water repellency to nylon, cellulose acetate and fabrics containing mixtures of these fibers at a cost comparable to that of other high quality water repellent treatments. For more information about DeCetex 104, call our nearest branch office or write for data sheet No. AF9.

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NEWS ABOUT Suppliers

Equipment Suppliers

American Machine & Foundry Co. has obtained exclusive selling rights in the United States to textile machinery manufactured by **Titan Ltd.** of Copenhagen, Denmark. Arrangements were made through the Titan American representative, Edda International Corp., New York. The Titan line currently consists of two products, an automatic warp-tying machine and an automatic heddle indicator. The former ties 6,000 to 18,000 warp ends an hour; the latter facilitates preparation of a loom for weaving.

Appleton Machine Co., Appleton, Wis., has appointed William Woosnam sales manager for the firm's textile finishing rolls and embossing equipment.

The Bahnson Co., Winston-Salem, N. C., will again conduct two one-week terms of classes for maintenance engineers on industrial air conditioning, starting Oct. 10 and 17. The courses will duplicate each other to permit organizations to send all their engineers and maintenance men without disrupting operating routine. The courses will offer latest information on maintaining at peak efficiency air conditioning equipment in their charge. Subjects covered will run from the history of air conditioning to automatic controls.

The Brown Training School of Industrial Instrumentation, Brown Instruments Div. of Minneapolis-Honeywell Regulator Co., at Philadelphia, Pa., is giving a comprehensive 13-week course and two five-week courses this fall. The instrument-maintenance and repair courses will cover millivoltmeter-type pyrometers, mechanical potentiometer pyrometers, continuous-balance electronic-type potentiometers, electrically operated automatic control, flow meters, thermometers, pressure gages, hygrometers, air-operated automatic control, Moist-O-Graphs, tachometers, resistance thermometers, CO_2 and analygraph.

A. B. Carter Co., Gastonia, N. C., has named J. Walton Brown to replace Tom Hunt in the Georgia, Alabama, Tennessee, and Mississippi territories in the engineering department of the traveler and mill devices company.

PALMER J. LATHROP was elected president of Cameron Machine Co., Brooklyn, N. Y., in July. Son-in-law of the late Harold C. Kinsey, former president, he has been a member of the board for several years and actively associated with the firm since September 1948. **Paul B. Withstandley** is now advertising manager, succeeding Harold Oversacker, new export-sales head.

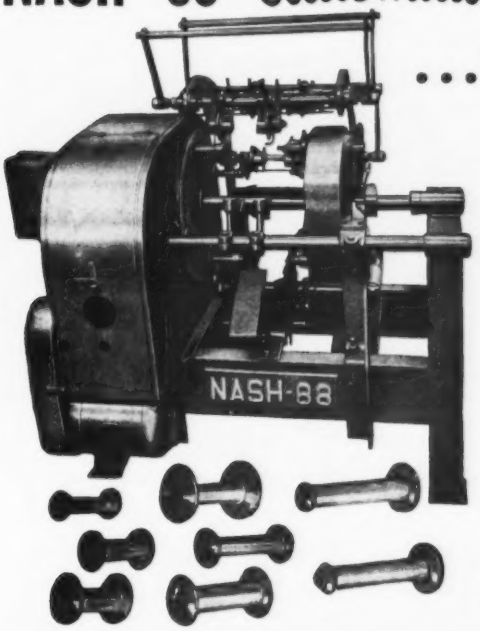
Coast Mfg. & Supply Co., Livermore, Calif., has named H. Bailey Little sales manager of the textile division. In his new capacity, he will control the marketing of Coast Manufacturing's new glass textiles in the Western market. The line will include decorative, coated, and industrial weaves.

Draper Corp. is shipping a number of wide Draper Modified "D" Looms to a cotton mill in the French-occupied zone of Germany. Shipments are being made out of the ports of Boston and Philadelphia. The looms will help provide textile machinery in southern Germany, where bomb damage, depreciation, and reparations have created a shortage. Financing is being done in part out of Marshall-Plan funds.

Edmos Products Corp., Brooklyn, N. Y., has named Alfred F. Mulluck sales manager of the firm's circular rib-body knitting machines. He

NASH "88" *Automatic* BOBBIN REFINISHER

...Now a Proven Veteran



Nash Bobbin Refinishers come like an answer to a prayer. There was urgent need for a machine that would keep bobbins in perfect condition and thus assure a better run-off of the rayon yarn. First came the larger No. 37 Bobbin Sander. Its acceptance and success created a demand for the No. 88, designed for mills requiring less capacity. Now, after many months of time-tested performance in the field, the No. 88, has won highest praise from users.

- It handles most types of flanged bobbins.
- Separate burnishing flanges produce a highly-polished surface of uniform quality.
- Abrasive action takes place on barrel portion inside flanges and top radius of flanges.
- It's high speed (10 bobbins per minute) saves labor . . . minimum set-up time is required.
- Quality that means low maintenance cost.

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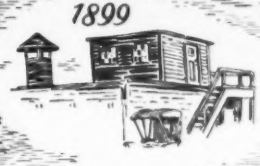
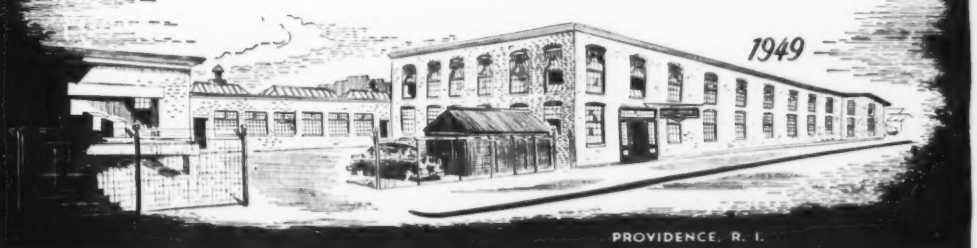
Scott Testers 50th Anniversary



Fifty years of cooperation in developing equipment to fulfill the indicated requirements of the industries we serve, have led to our growth from this small beginning to our present world-wide recognition as a source of quality testing apparatus. Industry has put its trust in us, and we look toward our second half-century with appreciation of your faith, and determination to merit it even more.



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Question: What is Exsize-T?

Answer: Exsize-T is an unusually efficient desizing agent made specially for the textile trade.

Question: Is it a chemical?

Answer: No! Exsize-T is a liquid enzyme concentrate that mixes readily with water.

Question: Is it harmless to fabrics?

Answer: Exsize-T is harmless to the sheerest and most delicate fabrics.

Question: Can it be stored safely?

Answer: Yes, it keeps well without loss of its starch digesting power.

Question: What is its temperature range?

Answer: Best results with the desizing bath at temperature between 130° and 140° F. If greater speed is desired, temperatures as high as 170° F can be used with slightly higher enzyme concentration.

Question: Is Exsize-T economical?

Answer: Actual use over a long period in many large textile mills has proven Exsize-T most efficient and economical.

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CHICAGO 1, ILLINOIS

NEWS ABOUT *Suppliers*

was formerly sales manager of Stop Motion Devices Corp.

Fafnir Bearing Co., New Britain, Conn., has awarded to the son of an employee the annual Elisha H. Cooper Memorial Scholarship for 1949. The recipient is Richard E. Vahlstrom, whose father has been a company accountant 26 years. The scholarship is valued at up to $1,000 a year and is good for four years of study at Yale, provided the winner maintains a satisfactory standing.

Filatex Corp., a wholly-owned subsidiary of **American Viscose Corp.** has named Thomas H. Andrews as manager of the sales division. He will continue as manager of Avisco's Vinyon sales division. Filatex is a commercial brand of elastic yarn, made with a latex core.

The Hemphill Co., Pawtucket, R. I., has appointed Muschamp Taylor Ltd., Manchester, England, as its exclusive sales agent in the British Isles for Hemphill Banner men's hosiery machines. The British firm will also service and supply replacement parts for the line of Banner machines. Demonstration models are being made available for the inspection of English knitters in Muschamp-Taylor show rooms in Manchester.

Owens-Corning Fiberglas Corp., Toledo, Ohio, has appointed John K. Park manager of research and development for textile products. He will make his headquarters at the Ashton, R. I., plant, where the Fiberglas textile laboratory is located. He has had an active role since 1933 in the experimental work carried on in company laboratories.

Peerless Pump Div. of Food Machinery and Chemical Corp. has named Frank W. McCann, previously head of centrifugal-pump sales at the Indianapolis, Ind., works, as manager of Atlantic district sales with headquarters in New York. Robert H. Hull has replaced Mr. McCann at Indianapolis.

Reliance Electric & Engineering Co., Cleveland, Ohio, has made William Compton, former manager of the Rockford, Ill., sales office, supervisor of standard motor sales, with headquarters in Cleveland.

FRED H. PILLSBURY is vice president in charge of operations of Century Electric Co., St. Louis, Mo. Formerly executive engineer of the firm, he has been a member of the board of directors for eight years.

He has been with Reliance since 1935.

Tatem Mfg. Co., Inc., Eastford, Conn., has appointed Harold E. Linderson, textile consultant of Providence, R. I., sales manager of the textile division. The firm has made picker sticks and wooden loom parts for 81 years.

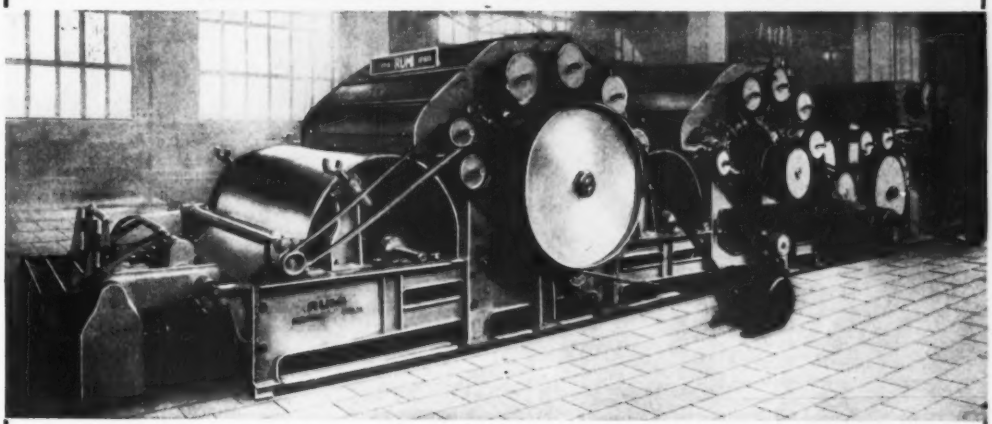
Textile Machine Works is now ready to market its new 60-gauge, 30-section "Reading" full-fashioned knitting machine. Fifty percent of company production is now in 60-gauge. The balance is in 51-gauge. A color film, "The Knitter and the Needle," is available from the company. It instructs knitters on how to straighten needles. The film was first seen at the Knitting Arts Exhibition last spring.

Universal Winding Co., Providence, R. I., has appointed Dudley M. Dunlop to succeed the late Isaac E. Wynne in the Charlotte, N. C., office. Mr. Dunlop has been covering northern New England, working out of Boston. In Charlotte, he will be associated with R. M. Mauldin and Frederick Sails.

Chemical Suppliers

Amalgamated Chemical Corp., Philadelphia, Pa., is offering new research and consulting facilities to textile wet processors: an air-conditioned research and development laboratory that was completed this summer. Hillary Robinette, Jr., is research director.

RUMI • CARDS • COMBERS • LOOMS



Two-cylinder worsted card with automatic feed box, breast, and Morel-type burr cleaner. Each cylinder has four workers and strippers and a burr-removing attachment. Width of card is approximately 51 inches. Send for complete information. Prompt Delivery.

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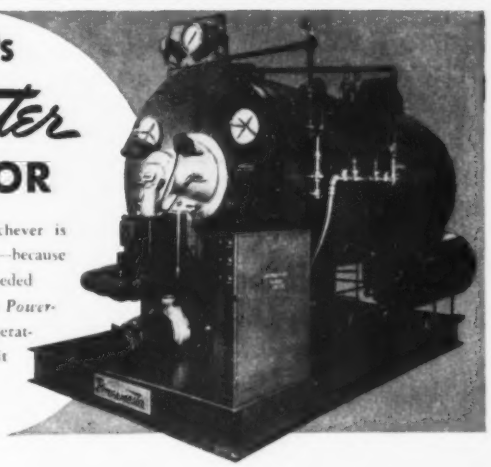

❶ *Use Low-Cost Fuel*—light oil, heavy oil or gas, whichever is most economical for your purpose; ❷ *Save Labor Time*—because Powermasters require only one-tenth the man-hours needed to operate and maintain old-style boilers; ❸ *Install a Powermaster as Auxiliary Unit*—to save the cost of operating your big boiler at low-demand seasons; it will fit in any "corner" of your plant.

You will get additional savings with this modernized Scotch type steam generator. Since it is delivered with boiler, burner, controls and feed water system built into a complete, pre-tested steam plant, you save on installation costs. Operating at *peak efficiency* at any pressure, this automatic unit produces just the right amount of steam needed for varying demands. You will also reduce maintenance man-hours because covers are easily opened and make all parts accessible in a matter of minutes. Latest catalog will be mailed on request.

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Whatever your requirements

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Specifications BOBBINS

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When you buy MACK Bobbins, your purchase is doubly safe-guarded by two specifications—yours and ours. Yours, based on the task you want performed, are fortified by Allentown's specifications met only after a series of tests—tests that performance prove MACK Bobbins before you buy them.

1. Vibrometer tests assure vibrationless running.
2. Concentricity tests assure even loading.
3. Strength tests check the head holding power of Mack Bobbins.
4. Special gauges and continual checking assure the accuracy of all dimensions.
5. Extra smooth surfaces prevent yarn abrasion.
6. The best materials selected to fit the job give long service life.

Look to Allentown for all your bobbin requirements.

BW MACK

ALLENTOWN BOBBINS WORKS, INC.

ALLENTOWN PENNSYLVANIA

NEWS ABOUT *Suppliers*

FEASTER V. TRIBBLE has been named Southern district sales manager of Aridye pigment colors and clears for the Textile Colors Div. of Interchemical Corp., Fair Lawn, N. J. His headquarters will be at Rock Hill, S. C. Before joining Interchemical in 1947, he was with Southern Bleachery & Print Works.

HARRY H. PACT has been appointed manager of the textile-chemicals department of the oil and chemicals division of E. F. Drew & Co., Inc., Boonton, N. J. He was formerly field supervisor.

American Cyanamid Co., has appointed Vincent V. Lindgren and B. R. Putnam, Jr., to the new-product development department of the firm. Dr. Lindgren, with the company for the past three years at Stamford Research Laboratories, will devote his time to new-product development. Mr. Putnam, formerly engaged in technical-engineering development, will be concerned with market-research activities.

Arnold Hoffman & Co., Inc., Providence, R. I., has brought out a new, low-cost, substantive compound to fix direct dyes—Ahcofix C. When added direct'y to urea-formaldehyde or melanamine-formal'dehyde resin baths, the new compound gives viscose ravons and cottons washfast properties comparable to vat-dved finishes. Direct-dved fabrics treated with this new substantive compound do not bleed, even when washed for 30 minutes in a 0.5% soap so'ution at 140° F., the company says.

Corn Products Refining Co., New York.—J. L. Buckner, vice president, has retired after 37 years with the firm. He had been associated with the Corn Products organization since 1921. He was largely responsible for the building between 1946 and 1949 of a new-type grinding unit at Corpus Christi, Tex., using mi'o sorghum grain as a raw material.

E. I. du Pont de Nemours & Co., Inc., has appointed George S. Demme, assistant director of nylon sales for the last five years, to the post of director of sales of the acetate division of the Rayon Department. He succeeds Robert E. Cullen who has retired after more than 34 years in the Du Pont organization. R. L. Richards is the new general manager of the Rayon Department. He will be aided by Andrew E. Buchanan, Jr., the new assistant general manager. Donald F. Carpenter, who recently retired as chairman of the Munitions Board, will succeed Mr. Buchanan as an assistant manager of the department. R. Jack Manning, of the ammonia department sales division, has been transferred from Wilmington to New England, with new headquarters in Needham, Mass. There were 82,116 holders of Du Pont common stock and 23,756 holders of Du Pont preferred stock at the end of June. These figures included 6,209 holders of more than one class of stock. Company stockholders are residents of every state of the union, and more than 41,500 are women.

Electro-Chemical Supply and Engineering Co., Paoli, Pa., has announced a complete reorganization. The officers of the company are: Dr. C. R. Payne, president; J. Wm. Grant, vice president and sales manager; Wm. A. Sesher, treasurer and production manager; Walter L. Sheppard, Jr., advertising and export sales manager. In addition to existing facilities for the acid, and corrosion-proofing

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Send me 3 years of "TEXTILE WORLD" for $4* ☐

☐ I will pay when you bill me. ☐ I enclose remittance.
CHECK HERE, IF YOU PREFER ☐ 2 YEARS FOR $3* OR ☐ 1 YEAR FOR $2*

Name_____ Position_____

Home Address_____

City_____ State_____

Company_____

*Above rates are for U.S. and U.S. possessions ONLY.
CANADA: $3 ☐ 1 year . . . $5 ☐ 2 years . . . $6 ☐ 3 years (payable in Canadian or U. S. funds.)
LATIN AMERICA: $10 ☐ 1 year . . . $16 ☐ 2 years . . . $20 ☐ 3 years.
OTHER COUNTRIES: $15 ☐ 1 year . . . $25 ☐ 2 years . . . $30 ☐ 3 years.

9-49

SWEEPSTICK

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in extra yardage

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CHECK HERE, IF YOU PREFER ☐ 2 YEARS FOR $3* OR ☐ 1 YEAR FOR $2*

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9-49

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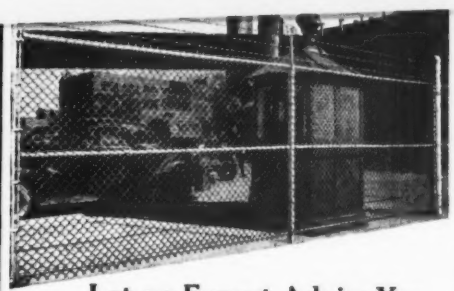

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1. Vibrometer tests assure vibrationless running.
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A REALLY **NEW** AND IMPROVED SWEEPSTICK

The **HEIM** *"Unibal" Sweepstick*

The Heim Company developed for the U. S. armed services during the war, a self-aligning spherical bearing with just one large ball rotating within a race, and bored so that the shaft passes through its center. This "Unibal" bearing has been built into a sweepstick, and the results obtained in softer and smoother pick action are most gratifying. The body of the new Heim "Unibal" Sweepstick is resilient, rubber-bonded fabric which absorbs shocks, and in combination with the "Unibal" bearing makes a truly smooth-operating sweepstick.

Order just one pair, install them on just one loom, and keep your own records of "down time" and production losses as compared with other looms not equipped with this remarkable sweepstick. This is the best way we know of to prove that the Heim "Unibal" Sweepstick will improve your operation and actually pay for itself in extra yardage because of uninterrupted production.

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NEWS ABOUT *Suppliers*

field, a new plant with 16,000 sq. ft. of floor space has been equipped at Emmaus, Pa.

Glass Fibers, Inc., Waterville, Ohio, has named R. W. Capaul general sales manager. He had been manager of the electrical division. F. J. Solon, Jr., has been appointed director of advertising and public relations.

Hilton-Davis, Cincinnati, O., has made its first batch of colors using its own beta-naphthol, produced in the company's new $1,500,000 plant. The plant should be in full production next month. A total of 31 new dyestuffs, fast bases and salts, naphthols, and intermediates has been added to the company line.

E. F. Houghton & Co., has appointed Frank Ross, former national manager of lubrication, to the newly created post of assistant to the vice president—sales. Mr. Ross will retain his duties and title as head of the lubrication department. He has transferred his headquarters from the Cleveland office to the home office in Philadelphia.

Pittsburgh Plate Glass Co., Columbia Chemical Div., Natrium, W. Va., has put into operation a chlorinated-benzene-producing plant. Under construction for more than a year, the new plant cost more than $1,000,000; and will produce monochlorbenzene, muriatic acid, paradichlorbenzene, and orthodichlorbenzene as co-products in a continuous chemical process. Production of the chlorinated benzene marks the firm's entry into the field of organic-chemical-compound production.

Wyandotte Chemicals Corp. has named Jack L. Craig as a technical field representative in the development department. He will specialize in the promotion of benzene-sulphone derivatives, aromatic acids, and chloroether-type compounds.

Other Services

A Knitting and Allied Crafts Exposition will be held for the first time in New York in April, 1950, under the joint sponsorship of the National Knitted Outerwear Assn. and the Underwear Institute. Both organizations will hold their conventions simultaneously with the show. The exposition will be managed by Expositions for Trades, Inc., with Arthur Tarshis as show manager. There will be an exposition advisory board made up of fifteen members of each organization.

EUGENE R. GARDNER has been named sales manager of the textile machinery division of Warner & Swasey Co., Cleveland, Ohio. Chairman of the company product-planning committee in 1943, he has since then devoted most of his attention to textile-development activities. He will handle sales operations in pin drafters, Pacific converters, and the adapted Sulzer weaving machines.

The **Southern Regional Research Laboratory** had 20% of its employees and former employees honored by the Dept. of Agriculture at a recent ceremony in New Orleans. Dr. George W. Irving, Jr., Assistant Chief of the Bureau of Agricultural and Industrial Chemistry, of which the Southern Laboratory is a part, presented to the group a superior-service award for outstanding contributions to the development of improved types of cotton tire cord.

U. S. Testing Co., Hoboken, N. J., has developed a new test method for accurately determining twist in 15-den. yarn and other monofilament-nylon yarns, utilizing a new type of take-up device built by the company instrument division. A new-type Universal testing machine has also been installed, incorporating full-load capacities from 2 to 5,000 lb., with a sensitivity of .002 lb. to 5.0 lb. at the extreme range, and with a guaranteed accuracy of 0.2% or better for any load range.

MACBETH

Color Matching Skylights

Be prepared for the uncertain weather days ahead. Macbeth Color Matching Skylights permit matching operations on any day or night, no matter what the weather. You can match with confidence and accuracy under a Macbeth Color Matching Skylight, standard of the industry.

We also manufacture a complete line of laboratory and industrial pH Meters.

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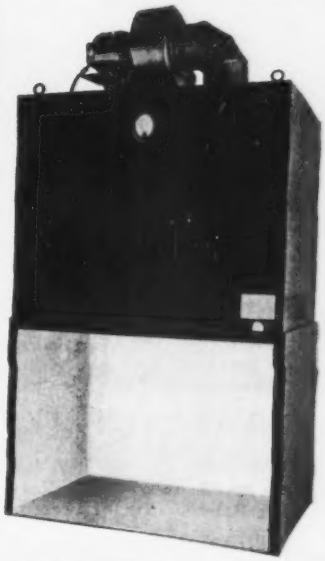

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Yarns

[French-Bradford]

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OUTERWEAR
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Complete color assortments

American Woolen Company

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The Lyons Chronometric Hand Tachometer is designed to provide exceptionally precise measurement of constant rotary and linear speeds.

Produced in two types, 0 to 1000 RPM and 0 to 10000 RPM, graduated in 1/5 RPM and 2 RPM subdivisions respectively, the Lyons has an overspeed allowance of 100%, is durable and entirely trustworthy.

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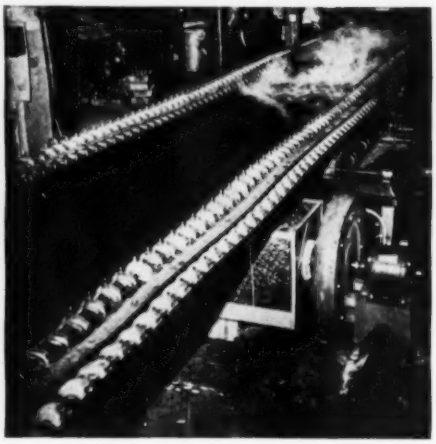

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for use in shrinking fabrics to the *"Sanforized"* standard by the Compressive Shrinkage process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

Write for information or see our representative

F. C. HUYCK & SONS
KENWOOD MILLS
Rensselaer, N. Y.

NEWS ABOUT Mills

Cotton Mill News

Amber Textile Mills, Anniston, Ala., has been purchased by J. W. Abernathy of Newton, N. C., from Rhodes-Rhyne Mfg. Co., Lincolnton, N. C. Purchase price was said to be $35,000.

Arkansas Cotton Mills, Inc., Morrillton, Ark., is building two extensions to present plant consisting of 5,000-sq. ft. extension to picker room to house new opener equipment, and 65,000-sq. ft. addition to main mill. Production equipment is being completely modernized throughout mill. New Saco-Lowell carding and spinning will be installed and also 600 Model-XP 42-in. Draper looms.

Avondale Mills unit at Lafayette, Ala., has installed five new Saco-Lowell openers. Complete overhead system of cleaning has been installed in card room. All spinning frames are now run by individual motors.

Bartex Spinning Co., Clayton, N. C., has completed construction program and installation of new machinery, which includes: new picker room, built and equipped with Aldrich system; new substation built by Carolina Power & Light Co., for mill power; five new Universal winders installed; 43 cards replaced, and 12 new additional Whitin cards installed; 24 new drawing frames installed, along with three intermediate-draft 10x5 slubbers and seven 8x4 speeders; 10 new Whitin spinning frames; four new Whitin combers. Fluorescent lights have been placed over winders, and entire plant will be equipped with fluorescent lights later.

Bemis Bros. Bag Co., Jackson, Tenn., has equipped its local plant for production of thread used in sewing bags. Installation is said to have cost $150,000. Coarse thread from 2s to 7s is produced.

Berkshire Fine Spinning Associates has given advance notice of intention to reopen its Greylock Mill, North Adams, Mass. The mill contains $150,000 worth of new machinery.

Dundee Mills, Inc., Griffin, Ga., is completing one-story addition to administrative building to house executive offices; individual offices for credit, traffic, and production departments; soundproof area for IBM department; and storage room. Space now occupied by offices mentioned will be converted into modern reception-showroom and directors' room.

E-Z Thread Co., New York, N. Y., has perfected plans for proposed new branch mill at Portsmouth, Va., and will occupy under long-term lease one-story, 144x175-ft. building to be erected by Portsmouth Industrial Foundation. Orin M. Bullock, Jr., Portsmouth, is architect.

Gibson Yarn & Weave Mills, Inc., Dallas, N. C., is reported to be manufacturing corduroys on experimental basis. Mill formerly produced print cloths.

Highland Park Mfg. Co., Charlotte, N. C., will make repairs and improvements to mill village at cost estimated over $72,900. Work will include general repairs and plumbing.

High Speed Threads, Inc., Greensboro, N. C., which was recently organized for manufacture of cotton thread for industrial purposes, has begun operations. Arthur A. Neller is president and Beverly C. Moore is vice president of company.

Hope Webbing Co., Inc., Providence, R. I., was awarded an Army contract for 2,000,000 linear yds. of 1¾-in., 2-oz., Type IV, OD-3, cotton webbing. Contracted price was 11.25¢ per yd.

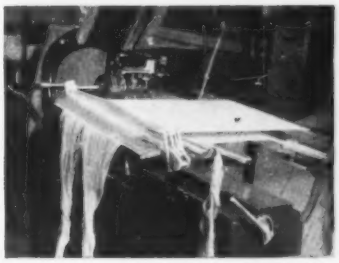
Joanna Cotton Mills Co., Goldville, S. C., is completing one-story addition to Mill No. 2 which will be used for additional cloth-room space. It is designed for later addition of two upper floors to match Mill

BARBER-COLMAN

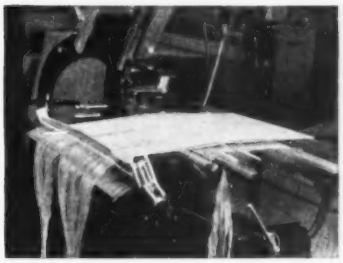
MODEL "LL" *Portable* WARP TYING MACHINE

THIS "UNIVERSAL" MACHINE TIES IN EITHER PLAIN OR LEASED WARPS WITH EQUAL SPEED AND EFFICIENCY

Under the conditions of modern styling, many mills need versatile equipment to handle frequent changeovers between filament and spun synthetic yarns. The Barber-Colman Model "LL" Portable Warp Tying Machine is extremely useful under such conditions because of its adaptability. It is a combination machine, with interchangeable selector mechanisms to select from either an end and end lease or a flat sheet. A trained operator can make the necessary changes in less than ten minutes. The production rate when tying from an end and end lease is the same as when tying from a flat sheet. Under average conditions, a good operator can tie up to 4000 ends an hour, or better. This machine is particularly valuable in mills where both flat and end and end leased warps are coming through, and where the use of separate machines is not justified as they would not be utilized to their fullest capacity.



Barber-Colman Model "LL" Portable Warp Tying Machine set up to tie in new warp from a flat sheet.



The same machine as above, but now loaded for tying-in leased warps, as shown by the lease rods.

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The instruction by demonstration method is used by Barnes Engineers as refresher training for their clients. The following questions were part of the **"Operating and Time Study Engineering Clinic"** held by the Barnes organization.

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2. Do we over-emphasize the need for a maximum of accuracy and thoroughness in the collection of **Mechanical and Operating** information?
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NEWS ABOUT *Mills* (Continued)

No. 2. Lockwood Greene Engineers, Inc., Spartanburg, S. C., drew up plans; and construction is under supervision of C. M. Guest & Sons, Anderson, S. C.

M. Lowenstein & Sons, Rockingham, N. C., will expend about $4,600,000 for extensions and improvements in its mills in North and South Carolina during present year, including work now in progress.

Merrimack Mfg. Co., Lowell, Mass., is reported to have returned to full-time three-shift production.

Montreal Cottons Ltd., Montreal, Que., recently began construction of extension to Gault Mills. Extension will be four-story, 89x436 ft., and will use three existing walls, thus filling in between existing structures. Cost of work will be approximately $50,000.

Pearl Mill, Casar, N. C., recently organized, will soon begin operation in manufacture of coarse yarns.

Pepperell Mfg. Co., Opelika, Ala., is completing 38,000 sq.ft. extension to new bleachery which will house additional finishing equipment. Batson-Cook is general contractor, and Robert & Co. Associates, Inc., is designing and supervising engineer.

Pilot Mills Co., Raleigh, N. C., has practically completed modernization program which cost about $500,000. Installation included combers, new long-draft spinning, package-dyeing equipment, and Whitin-Schweiter quillers. New finishing plant also has been built for piece dyeing and mercerizing, including shearing and singeing. Latest type of Sanforized-finishing range also is in operation.

Riegel Textile Corp., Ware Shoals Div., Ware Shoals, S. C., is installing 77 new warp-spinning frames. New frames have been on order for several years. All but 26 of them are replacements for old frames installed in 1905 at time plant was built. Remaining 26 are replacements at Ware Shoals for same number of modern frames moved to Fork Shoals, S. C., within past year.

Robinson Cotton Mills, Ltd., Woodbridge, Ont., on which work was started early in post-war period, is now nearly completed. New plant was erected for production of gray cloth for later dyeing and finishing in company converting division. The mill will have 400,000 sq. ft. of floor space. Entirely one-story, plant operates in straight line with no unnecessary handling of product between various processes. Head office building in Leaside, Ont., was erected in 1947.

Rockfish-Mebane Yarn Mills, Inc., Cumberland, N. C., is installing 12 new Saco-Lowell combers and 51 new Whitin cards in new two-story brick and concrete addition with 15,000 sq. ft. of floor space. Eleven cards are replacements.

Russell Mfg. Co., Middletown, Conn., was awarded an Air Force contract for 593,000 linear yd. of 1¾-in. Type IV, blue 89, cotton webbing. Contracted price was 12.15¢ per yd.

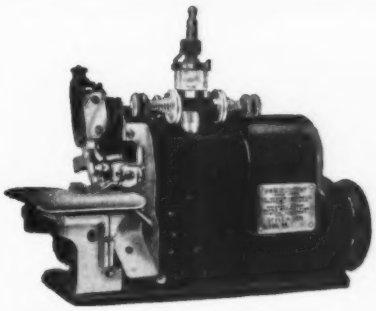
Smitherman Cotton Mills Co., Troy, N. C., has just completed modernization program that required 18 months and cost $200,000. Revamping extended throughout mill and included installation of new machinery, as well as overhauling and changing over of older machinery. Overhauling of looms is nearly complete. Feelers and some 4-bank warp stop motions are being installed.

Spool Cotton Co., Portland, Ore., has leased one-story building, to be constructed at N.E. 13th Ave. and Lombard Ave., and will use for local plant branch and warehouse. Cost reported over $150,000, with equipment.

J. P. Stevens & Co., Inc., Greenville, S. C., has sold 300 dwellings in Victor-Monaghan Co. community to employees. Financial transaction amounts to about $1,200,000 and has been in process since February. Prices ranged between $3,000 and $4,000. Eleven homes remain to be sold.

Texas Textile Mills, McKinney, Tex., opened recently with staff of between 250 and 300 employees. Unit has been completely rebuilt following severe damage in tornado in May, 1946.

Utica & Mohawk Cotton Mills, Inc., Seneca, S. C., ex-



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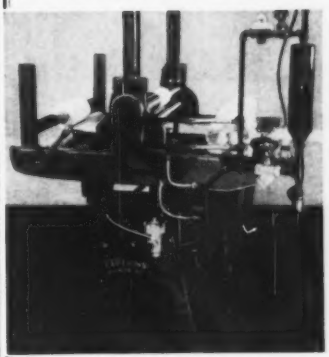

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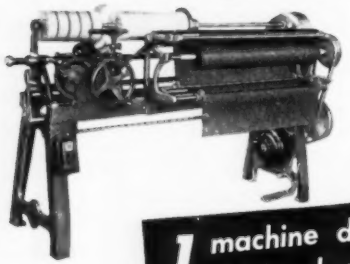

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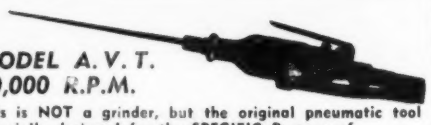

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REMOVING LINT and FLY
from the top rolls and other parts of the drafting elements on
SPINNING FRAMES also ROVING FRAMES

Spindle design permits using PICK (which gathers the fly and lint), 3/16" diameter by 5" long when used on Spinning Frames and 3/16" diameter by 7" long when used on Roving Frames. Exhaust air directed back of roll picker to prevent fly and lint from being blown into yarn when spinning . . . PATENT APPLIED FOR. Weight only 14 oz. Special grease-sealed bearings. No lubrication required.

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NEWS ABOUT *Mills*

pects to complete installation of large number of Model X-2 high-speed looms this year. New clothroom is in operation, and new Curtis & Marble Machine Co. shearing machine will be installed.

Wamsutta Mills, New Bedford, Mass., is continuing its modernization and expansion. Machinery worth $1,800,000, including 300 looms, has already been added since recent change in management. New lines especially for cutting trades are being added.

Warrior Duck Mill, Spartanburg, S. C., has installed new machinery costing between $40,000 and $50,000 and will soon begin manufacture of Reevon, newly developed plastic for seat covers.

Winnsboro Mills of United States Rubber Co., Winnsboro, S. C., has construction under way on $250,000 development laboratory. New laboratory will permit consolidation of research and development work of textile division of U. S. Rubber and will employ about 60 people. Dr. S. H. Sherman, manager of textile-division development department, will be in charge, moving his headquarters from Hogansville, Ga., to Winnsboro.

WOOL MILL NEWS

Bachmann Uxbridge Worsted Corp., Glenmark Mill, Woonsocket, R. I., has reopened on temporary basis. Plant was shut down March 30. Employment for three to four months for 100 workers has been indicated with reopening to fill rush orders for certain types of worsteds.

Sidney Blumenthal & Co., Shelton, Conn., has been granted permit for construction of one-story brick and reinforced-concrete addition, 55x 330 ft., for manufacture of upholstery.

Botany Mills Inc., Passaic, N. J., has temporarily leased space in recently closed Jamestown Worsted Mills, Jamestown, N. Y., to do mending and burling on its own account because of shortage of this type of help around Passaic.

Broad Brook Co., Broad Brook, Conn., has begun construction of brick addition to spinning building near Main St. Bartlett Brainerd Co., 103 Woodbine St., Hartford, has general contract. Plans were drawn up by Buck & Buck, Hartford.

Dodge-Davis Mfg. Co., Bristol, N. H., has been purchased by International Packing Co., Worcester, Mass.

Fieldcrest Mills, Draper, N. C., has begun modernization program at company's blanket mill. Principal projects are replacement of older looms by new and more efficient models and change-over from old jack-spinning process to modern large-package wool spinning on ring frames. When program is completed all old looms will have been discarded and replaced by 291 newer models. To date, 160 looms have been replaced.

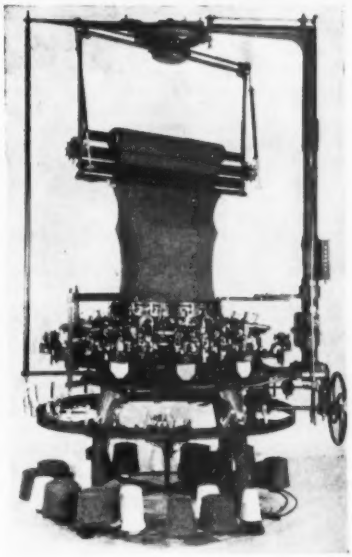
Forstmann Woolen Co., Passaic, N. J., has published a 69-page booklet on its three-year apprenticeship-training program. Included are a detailed outline of operations, a listing of technical instruction covered, and photographs of mill processes.

Gay Bros. Co., Cavendish, Vt., will move machinery and equipment from Gaymont Mill, Ludlow, Vt., to main plant at Cavendish.

Hampshire Worsted Mills, Manchester, Vt., has sold about 85% of its equipment to John J. Hosey, president of Energetic Worsted Corp., Bridgeport, Pa., for about $36,000. It is said that Mr. Hosey will dispose of some machinery for export and to domestic mills, and perhaps transfer some to firm he heads.

Lauell Fabrics, Inc., Central Falls, R. I., has been incorporated to manufacture worsted-blend fabrics. Company was incorporated by Clifton E. Allen, former divisional superintendent of Crown Mfg. Co., Pawtucket, R. I. Joseph Gluttari, president of Lyman Fabric Co., Inc., is associated with Mr. Allen in new enterprise.

Mohawk Carpet Co., Amsterdam, N. Y., is reported planning new one- and two-story felt mill at Phoenixville, Pa. Charles T. Main, Inc., 80 Federal St., Boston, Mass., is architect and engineer.



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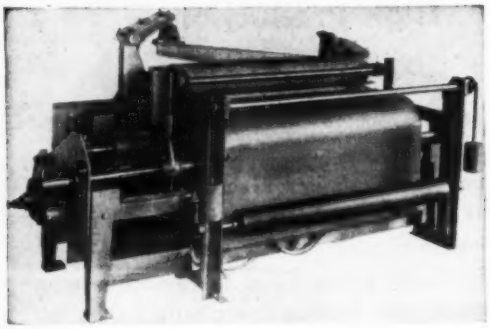

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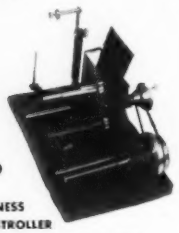

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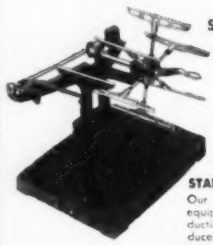

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NEWS ABOUT *Mills*

Sawyer Regan Co., Dalton, Mass., is adding a second shift to meet demand for fall woolens.

Pacific Mills, Worsted Div., Lawrence, Mass., has developed a process for enhancing and protecting all-wool fabrics, to complement its wool-washable and water-repellant processes. The new process sustains attractiveness, resists wrinkles and stains, and prevents shrinkage during cleaning.

Spinners Ltd., Huntington, Que., managed by Francois Cleyn, is having one-story addition, 60x100 ft., of concrete-block construction erected to mill at same location. Cost of work is estimated at $20,000.

M. T. Stevens & Sons Co., Dublin, Ga., has reached full production on light-weight woolens in new mill. Equipment consists of Whitin woolspinning frames, Abbott automatic quiller, and Whitin direct warp-dressing unit. Work is progressing on establishment of company's mill at Milledgeville, Ga.

SYNTHETIC-MILL NEWS

Bristol Weaving Co., Bristol, Va., has begun construction of one-story addition to be used for expansion of weaving department, and for warehouse purposes. Plant is engaged in manufacture of rayon piece goods.

Celanese Mexicana, S. A., and **Viscosa Mexicana, S. A.**, both jointly owned by Celanese Corp. of America and Mexican financial interests, are expanding viscose and acetate rayon-yarn production in Mexico. Celanese Mexicana plant at Ocoltan has underway additional expansion of 2,000,000 lb. of acetate-rayon filament yarn which brings production up to 20,000,000 lb. annually. Further expansion of 5,000,000 lb. is contemplated, and production equipment for acetate staple fiber soon will be completed.

Chatham Mfg. Co., Pittsboro, N. C., has plans going forward for construction of addition to mill which will provide space for large increase in output.

Cordene Mills, Monroe, N. C., is newly established textile plant operating 1,300 spindles on novelty yarns. French Campbell and B. T. Bumgerdner are operating plant as partnership.

Duplan Corp., Lincolntown, N. C., added a third shift to its local operations recently.

E. I. du Pont de Nemours & Co., Wilmington, Del., which has under construction new synthetic-fiber plant at Camden, S. C., has awarded piping contract to Poe Piping & Heating Co., Greenville, S. C. Contract for electrical work has been awarded to Standard Electric Co.

E. W. & G. A. L. Co., Inc., Providence, R. I., has been chartered with capital of 600 shares of stock, no par value, to manufacture rayon fabrics. Alan P. Cusick, Phelps Rd., Middleton, R. I., is principal incorporator and representative.

L. W. Guild Co., Inc., New York, N. Y., has changed name and is to be known as **Louis P. Smith Co., Inc.**, according to Louis P. Smith, president. Recently orgaization was split into two sections. Milton F. Landis is vice-president in charge of sales, with headquarters at company's New York office. It is understood that company will branch out into new fabrics such as nylon, while continuing to supply goods for sportswear, skiwear, and men's topcoat fields.

Horvath Mills, Inc., New York, has absorbed its three wholly owned subsidiaries—West Mills, Inc.; Fulton Mills, Inc.; and Phillipsburg Textile Print Works, Inc.

Schwarzenbach-Huber Co., Luray Textile Div., Luray, Va., is constructing 75x100-ft. addition to plant which will house machinery for throwing nylon yarn. Work is being done by D. B. Cottman and is expected to be completed by January. Plant will primarily throw yarn for hosiery manufacture, but will also handle yarns for all types of fabrics. Luray plant will be principal throwing unit of company, which operates six plants in Pennsylvania and Virginia.

Tennessee Eastman Corp., Kingsport, Tenn., is currently making studies for location of small plant in Arkansas or Texas to produce certain ma-

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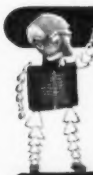

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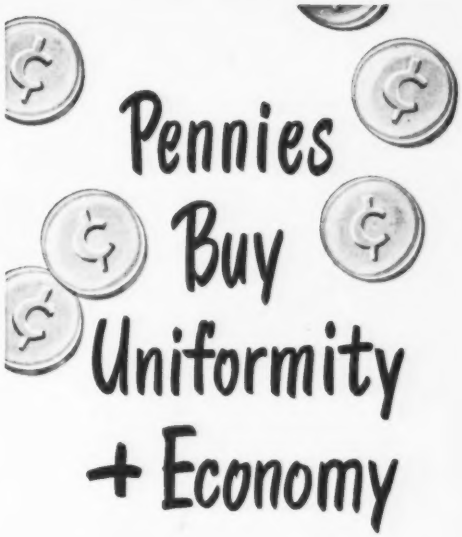

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NEWS ABOUT *Mills* (Continued)

terials used at company's Kingsport plant.

Textron Southern's new rayon weaving mill, Hartwell, Ga., has been sold by company, but Textron will retain occupation of plant for 50 years under lease. Transaction was made through George D. Moriaty, broker. Mill was purchased by Norman Barnes & Co., of Chicago, for undisclosed investor for $1,200,000.

United Rayon Mills, Elberton, Ga., has work well under way on construction of addition which will practically double size of plant. Project will represent investment of approximately $500,000.

Virginia-Carolina Chemical Corp., Richmond, Va., will move administrative offices of Fiber Division from V-C Fiber Plant, Taftville, Conn., to general offices in Richmond. Sales offices will also be moved from Taftville to Richmond in due time. Taftville operations will continue primarily on production. The company has opened a new bag plant in Atlanta, Ga., to make varied products including protein synthetic fiber. Ernest R. Lacy, formerly of Richmond, has been appointed Southeastern district manager, with headquarters in Atlanta. Harold R. Stemple is superintendent in charge of plant operations. New plant will manufacture multiwall bags, and burlap and cotton bags.

Woonsocket Rayon, Inc., Woonsocket, R. I., has been sold by Floran Corp., New York, to Rayon Liquidating Corp. Purchaser is new Rhode Island corporation of which Albert H. Kahn of New York is president. Mr. Kahn said that every effort would be made to reopen plant which has area of 250,000 sq. ft. It is understood that Mr. Kahn will either operate mill himself or sell to someone to run it as rayon plant.

KNITTING MILL NEWS

Angelica Hosiery Mills, Inc., Angelica, Pa., has been chartered to manufacture, buy, and sell hosiery and other knit goods.

Appalachian Mills Co., Knoxville, Tenn., has put into operation one of four units. Mill reopened recently following five-month shutdown. President W. A. Brownlee said volume of business may justify reopening all units.

Asheville Hosiery Co., Asheville, N. C. is installing six 30-section, 51-gage full-fashioned knitting machines and expects later to install 60-gage machines. Plans are being made to install air-conditioning in near future.

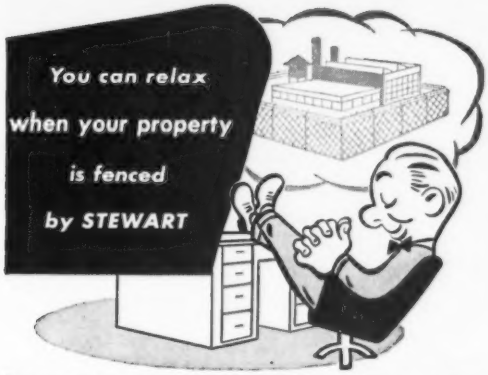
Atsco Hosiery Mills, Inc., Graham, N. C., is scheduled to begin operations soon. It will be engaged in manufacture of women's full-fashioned nylon hosiery in gray. Incorporators of new firm included Ted Atkinson of Greensboro; Don E. Scott and Don E. Scott, Jr., both of Graham. Mr. Atkinson is resigning as purchasing agent of Mock-Judson-Voehringer Co., of N. C., Greensboro, to become president and general manager of new mill.

Black Knitting Mills, Ltd., Montreal, Que., plans to make alteration to mill and office building at 5120 St. Dominique St., Montreal. Alterations planned are to improve plant and offices. Reuben Fisher, 3476 Park Ave., Montreal, is architect.

Black Mountain Hosiery Mills, Inc., Black Mountain, N. C., has installed one of new Scott & Williams circular-knitting-machine attachments which maintains even tension on rubber yarn when knitting elastic tops on anklets.

Burlington Mills Corp., Greensboro, N. C., is speeding modernization of plant and equipment at May Hosiery Finishing Plant, May Hosiery Plant, and McEwen Hosiery Plant, Chilhowie, Va. Machines are being replaced with latest model full-fashioned knitting machines; old seaming equipment is also being replaced. Air-conditioning systems have been completed or are under way.

Chadbourn Hosiery Mills, Inc., Charlotte, N. C., plans modernization and extension program at its various mills in North Carolina. Company manufactures both full-fashioned and seamless hosiery. Work will consist primarily of additional machinery and facilities. Entire project will cost approximately $1,000,000.



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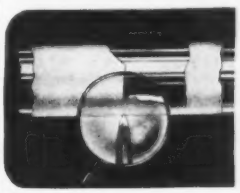

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method of slitting solved one part of the problem. Note how the web is *cleanly* parted by pressure of the slitter wheel against the hardened steel surface of the cutter backing roller, tending to seal the edges as they are severed, greatly reducing fuzz and lint, eliminating fraying.

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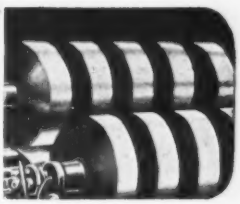

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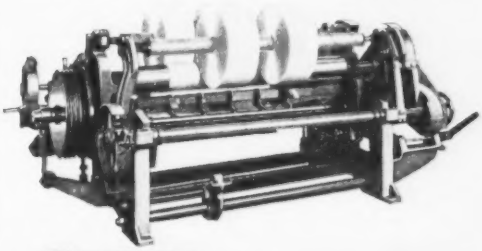

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NEWS ABOUT *Mills*

Falmouth, Va. – Stafford county residents are pushing plans to establish $335,000 hosiery plant here which would employ some 50 persons. Operator of proposed plant is Philadelphia concern, which would set up ten machines worth $270,000 in $65,000 building yet to be erected. Plant would turn out women's top-quality hose. To finance construction, local residents will form realty holding corporation. Rurital Club's industrial development committee, headed by St. Clair Brooks, is playing prominent part.

Grey Hosiery Mills, Inc., Hendersonville, N. C., has been formed with capital stock of $500,000 to manufacture hosiery. Incorporators were James Grey, Frances Grey, and C. L. Grey, all of Hendersonville.

Holeproof Hosiery Co., Los Angeles, Cal., has purchased machinery and equipment of Compton Mills Corp., Los Angeles.

Hudson Hosiery Co., Charlotte, N. C., plans establishment of branch mill in Stuttgart, Germany. Fritz Seifart, president of mills, is now in Stuttgart making arrangements for establishment of branch mill of Hudson company. No details are available.

Jackson, Ala.–Reports indicate that Vanity Fair Mills is contemplating addition of major unit to mill here. New addition will be complete operating unit.

Jantzen Knitting Mills, Portland, Ore., is locating new factory, to be known as Jantzen International, Inc., at Bayamon near San Juan, Puerto Rico. New plant will start up with 20 Supreme knitting machines making children's tee shirts. A. D. Lipsey is now in Puerto Rico directing construction of new plant. First deliveries are expected to be made within six months.

Main Knitting Mill, Ltd., Montreal, owned by H. Shapiro, will construct extension to present plant at 7030 Grande Ave. Plans call for addition, 100x43 ft., one story, and basement, with walls of brick and concrete block. Architect is Reuben Fisher, 3476 Park Ave., Montreal.

Palm-Knit Hosiery Mill, Carrollton, Ga., was seriously damaged by fire recently, involving loss of about $38,000.

Parker-Renfroe Knitting Mills, Hickory, N. C., recently organized concern for manufacture of infants' and children's knit underwear, has leased building in Hickory and installed machinery from mill owned by Dr. Parker Holt Knitting Mills Co., Canton, Mass.

Pilgrim Full-Fashioned Hosiery Mills, Morganton, N. C., has moved from location at Bridgeport and is now in operation at modern plant on Highway 70, five miles east of Morganton. New brick building is 92x70 ft. and is air-conditioned. Kalio knitting equipment has been installed. Kurt Thwemmler is superintendent.

Regal Hosiery Co., Reading, Pa., was recently purchased by Morris Speizman Co., Charlotte, N. C., and will be liquidated.

Robinson Hosiery Co., Chapel Road, Gastonia, N. C., has broken ground for construction of industrial building. New plant is headed by Ralph S. Robinson, president of Robinson Mills, Inc., also of Gastonia. New company will manufacture 51-gage full-fashioned hosiery in gray, using four machines.

Shawmut, Inc., Stoughton, Mass., will establish mill in Montezuma, Ga., for manufacture of children's underwear and other garments. Plant to be known as Vanta Corp., will employ 300 to 350 women at beginning of operations. Building to cost about $200,000 will be constructed by holding company to house industry under lease. It is understood that Vanta Corp. may also manufacture hosiery at Montezuma plant.

Sheer-Allure Hosiery Mills, Perkasie, Pa., has severed connections with Bedminster Hosiery Co., Bedminster, Pa., and is operating under supervision of Stanley and Frank Gegas. Company manufactures 66-gage nylon hosiery.

Temple Full-fashioned Hosiery Mill, Inc., Reading, Pa., has begun work on 80x110-ft. addition to provide space for eight additional knitting ma-

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3. STAPLE COTTON FABRICS

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5. FUNDAMENTALS OF SUCCESSFUL MANUFACTURE

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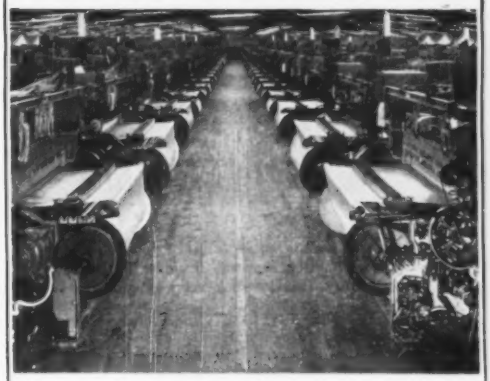

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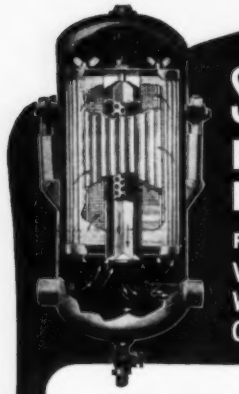

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NEWS ABOUT *Mills*

chines. Addition will house some departments now in main building, while main building will be devoted entirely to knitting operations and will be air-conditioned. Company is preparing to install new 60-gage machines.

Wil-Tex-Knit Products Co., Carrollton, Ga., is new name for former Wil-Tex Hosiery Products Corp., according to recent action by Superior Court of Carroll County.

Wiscassett Mills, Inc., Albemarle, N. C., has awarded contract for one-story building to be used as recreational center for operatives. Building will include auditorium, bowling alleys, kitchen, etc. Cost of building will be $189,000 without equipment.

DYEING AND FINISHING PLANT NEWS

Assonet Finishing Co., Inc., South Main St., Freetown, Mass. has been incorporated with capital of $15,000, to operate dyeing and finishing mill. Malcolm P. Decker, Freetown, is president.

Blackstone Dye Works, Inc., and **P. Hebert Knitting Mills, Inc.,** both of Woonsocket, R. I., have arranged for merger under first-noted name, with capital of 1,236 shares of stock, no par value. Companies have been closely associated in past.

Bradford Dyeing Association, largest of its kind in England, with American plant, Bradford Dyeing Association, Bradford, R. I., is now taking over Consolidated Piece Dyers Ltd. of Canada, Cobourg, Ont., of which H. S. Leybourne is managing director and W. H. Booth is manager. Consolidated Piece Dyers has plants in Montreal, Toronto, and Cobourg, Ont. Plant at Bradford, R. I., has arranged for increase in capital to $4,000,000 for general expansion in operations.

Cranston Print Works' new finishing plant at Fletcher, N. C., is expected to be completed by October. Filter plant is being tested, B & W boiler is being installed in power plant, and arrangements are being made for installation of new equipment. Plant will be modern in every respect.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., broke ground recently for fabrics and finishes department to be located at Philadelphia. Scheduled to be completed next year. Marshal Laboratory will cost $2,000,000. Project is aimed at increasing and improving research facilities to develop better protective coatings for industry, home, and farm.

Electric Vat Processing Co., Paterson, N. J., has been incorporated to bleach, dye, and print textiles. Incorporators are J. Mortimer Rubenstein, Louis Infald, and Charlotte Perruzzi.

Lanett Bleachery & Dye Works, Inc., Lanett, Ala., has awarded contract for installation of air-conditioning system in mill, which will cost about $350,000.

Martex Printing & Dye Works, Paterson, N. J., has changed its name to Texstyle Corp.

New Era Dyeing & Finishing Co., Fair Lawn, N. J., succeeds New Process Dyeing & Finishing Co. Company is now under sole ownership of Nathan Kluger as president. Firm has lately installed new dyeing and finishing machinery and laboratory for research and testing.

Nylprint Corp., New York, N. Y., has been chartered with capital of 1,000 shares of stock, no par value, to operate textile print works. Maurice Josephberg, 152 W. 42nd St., New York, is attorney and representative.

Peerless Finishing Corp., Paterson, N. J., has been incorporated to dye and finish yarns and fabrics. Capital stock is 2,000 shares of no par value. Incorporators are David Harrison, Frances Gelter, and Alba Hutchinson.

United States Finishing Co., Norwich, Conn., has its new Becco continuous-bleaching range in active operation. Company now gets complete bleach in five hours ready to print, whereas under old methods it took about five days. New mercerizing range at Norwich, which cost $150,000 to install, is also in steady operation.

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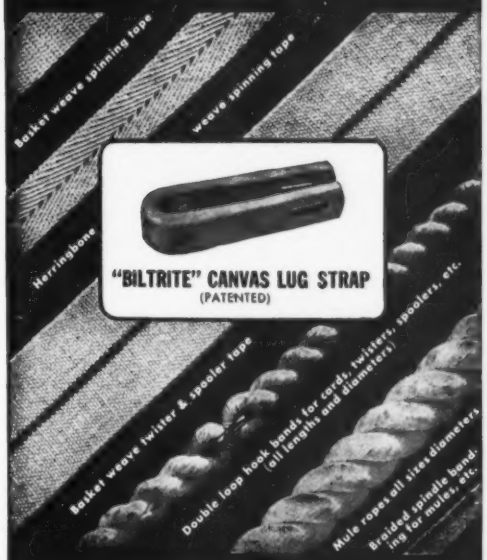
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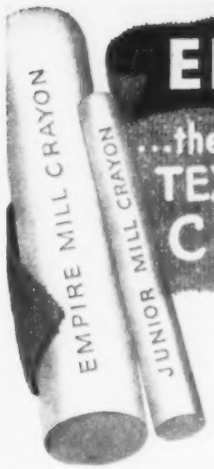

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NEWS ABOUT *Men*

J. Wesley Ames, manager of Arkwright Corp., Finishing Div., Fall River, Mass., has resigned. He was with the Kendall Co. before joining Arkwright nine years ago.

Edward K. Atkinson, Greensboro, N. C., purchasing agent for last four years for Mock-Judson-Voehringer Co. of N. C., Inc., resigned to become president and general manager of Atsco Hosiery Mills, Inc., recently chartered at Graham, N. C., to manufacture women's nylon full-fashioned hosiery. It will sell its production in gray to other manufacturers to finish. **Don E. Scott, Sr.**, of Graham, is chairman of board, and **Don E. Scott, Jr.**, is secretary.

Jack Barrett has been promoted from production manager to assistant superintendent of Anchor Rome Mills, Rome, Ga. **Bill Barrett** is now overseer of spinning at same plant.

S. Barstow has resigned as overseer of scouring, worsted carding, and card gilling at Goodall-Sanford Mills, Sanford, Me.

C. Y. Bumgardner, who has been master mechanic at Springsteen plant of Springs Cotton Mills, Chester, S. C., has been promoted to superintendent of machinery at Lancaster, S. C., unit of Springs Cotton Mills.

Frederick Burgoin has become overseer of cloth room at Pepperell Mfg. Co., Fall River, Mass.

Donald Button has become assistant superintendent at Stevens Mill, North Andover, Mass.

Henry Carignan has become overseer of worsted carding at Arms Textile Mfg. Co., Manchester, N. H., succeeding **D. Ramsey**.

Ernest Carr has become overseer of dyeing for Keystone Dyeing Co., Philadelphia, Pa.

George Chappell has resigned position as general superintendent at Hartford Woolen Mills, Hartford, Vt., to accept similar position with Wyandotte Worsted Co., Pittsfield, Mass.

O. C. Childers has been appointed slasher foreman at Monarch Mills unit at Lockhart, S. C.

Paul Choate has become assistant superintendent at Slatersville Finishing Co., Slatersville, R. I., succeeding **Robert Lofgren**, who has gone to Hohokus Bleachery, Hohokus, N. J.

W. W. Cobb, superintendent of Norris Cotton Mills, Cateechee, S. C., has retired after 29 years in that office. He will be succeeded by **R. A. Taylor**, assistant superintendent.

Thomas J. Corcoran, Jr., has been relieved of duties as manager of clothing fabrics division of Dan River Mills, Danville, Va., due to illness. Mr. Corcoran will continue to be affiliated with Dan River Mills, with which he has been connected for past 19 years. He is succeeded by **Edwin F. Tilley**, who came from American Woolen Co.

Roger W. Cross, Jr., has become associate research chemist at Callaway Mills Co., La Grange, Ga., research division. He received master's degree from Institute of Textile Technology, Charlottesville, Va., last June.

Lonnie Cummings, who has been assistant overseer of weaving at Eva Jane Plant of Avondale Mills, Sylacauga, Ala., has been promoted to overseer of weaving at Catherine plant of same company.

Walter Dillard, former vice president and general manager of New Braunfels Textile Mills, New Braunfels, Tex., and former vice president and agent of Pomona Mfg. Co., Greensboro, N. C., has resigned as assistant to president of Monument Mills, Inc., Housatonic, Mass., to join Comal Hosiery Mills, New Braunfels, Tex., as vice president.

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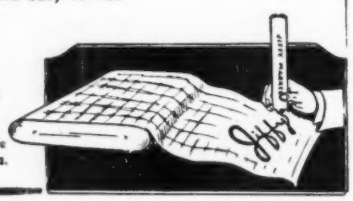

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NEWS ABOUT Men

William Preston Dunson, of LaGrange, Ga., has been elected superintendent of Woodlawn unit of American Yarn & Processing Co., Mount Holly, N. C., succeeding **C. O. Morgan,** resigned.

Charles H. Dyson, lately president of Textron, Inc., and executive vice president of Textron Incorporated, has joined Burlington Mills Corp., New York, as administrative vice president.

Marshall J. Gardner has been appointed superintendent of print-works plant of Cone Finishing Co., Greensboro, N. C., succeeding the late Walter L. Thornburg. Mr. Gardner was formerly assistant superintendent.

William Grier, general manager of Rock Hill Printing & Finishing Co., Rock Hill, S. C., has been elected to office of executive vice president.

Victor U. Groce, superintendent of mercerizing plant of American Yarn & Processing Co., Mount Holly, N. C., has resigned and has been succeeded by **Horace Doan,** who will continue as chief chemist. **James W. Lakin** will assist Mr. Doan.

Edward R. Hale, former vice president of Hoosac Mills Corp., North Adams and New Bedford, Mass., has been elected president to succeed the late Morgan Butler. He also succeeds Mr. Butler as treasurer. **William M. Butler, II,** was named vice president to succeed Mr. Hale.

T. B. Hamrick has been promoted to foreman of weaving at Draper Sheeting Mill of Fieldcrest Mills, Draper, N. C., succeeding **Cecil J. Squires. S. C. Summey,** former night foreman of carding and spinning, succeeds Mr. Hamrick as night foreman of weaving at blanket mill.

Howard R. Hart has succeeded the late Julian K. Morrison as executive vice president of Brighton Mills, Shannon, Ga. Mr. Hart has been vice president in charge of production for over 10 years. In that office he is succeeded by **A. Dennison Hull, Jr.**

Guy Haynes has become overseer of dyeing for Pentucket Mills, Haverhill, Mass., succeeding **W. Stoehrer,** who has retired. Mr. Haynes was second hand under Mr. Stoehrer.

Charles S. Henery has been elected president and treasurer of the newly formed Bamberg Textile Mills at Bamberg, S. C. He had been previously president of Santee Textile Mills, which was purchased by the new corporation when owners decided to liquidate the print-cloth weaving plant.

E. Julian Hinson, Jr., lately assistant overseer of carding at Eureka plant of Springs Cotton Mills, Chester, S. C., has been promoted to overseer of same department. He succeeds **J. Bell,** who has resigned.

Carl G. Horton, controller and assistant treasurer of Textron Southern, Inc., Anderson, S. C., has resigned to join Springs Cotton Mills, Lancaster, S. C.

J. M. Jackson, former assistant to general superintendent of Columbus Mfg. Co., division of West Point Mfg. Co., Columbus, Ga., has been named superintendent of Gaffney Mfg. Co., Gaffney, S. C., to succeed **A. L. Taylor.**

David H. Johnson, formerly with Borden Mills, Kingsport, Tenn., is now with Crown Cotton Mills, Dalton, Ga., as consulting industrial engineer.

Fred L. Johnson, vice president of Belding Heminway Corticelli, Inc., N. Y., was elected president and member of executive committee. He succeeds **William G. F. Price,** who has resigned because of poor health. Other changes included election of **Harold A. Johnston** as executive vice president and of **Richard T. Kropf** as vice president.

Nelson Kessell, general superintendent of Firestone Textiles, Gastonia, N. C., is in Buenos Aires, Argentina, to supervise installation of machinery in Firestone's new textile plant there. He will return to United States when project is completed. **William F. Gates** will go to Buenos Aires to become manager of new plant when it begins operations late this year.

Rene de Lathauwer has become superintendent of French-system worsted yarn depart-

NEWS ABOUT *Men*

ment at Wood Worsted Mill, Lawrence, Mass., succeeding **Albert Weymans.**

Carroll B. Little has resigned as assistant manager of Bemis Bros. Bag Co., plant at Bemiston, Ala., to join Robert & Co. Associates, Inc., Atlanta, Ga., as member of textile engineering staff.

Richard F. Lowery, Chickamauga, Ga., has become production manager of Piedmont Cotton Mills, East Point, Ga.

Hughston M. McBain, former president, has been elected chairman of board of Fieldcrest Mills, Spray, N. C. **James L. Palmer,** former executive vice president, succeeds to presidency, and office of executive vice president has been discontinued.

Norman W. McCall resigned as superintendent of operations at McCormack Spinning Mill, Inc., McCormick, S. C., to accept position of superintendent of three plants of Mt. Vernon-Woodberry Mills, Inc., Baltimore, Md.

Homer McGill has resigned as plant superintendent of American Thread Co., Tallapoosa, Ga. He will be succeeded by **Wes Littlefield,** former assistant superintendent of Bristol plant.

John Howard Mundey has been appointed general superintendent of Paola Cotton Mills, Statesville, S. C., succeeding his father, the late F. E. Mundey. **Ernest Logan Mundey** has been made assistant superintendent.

Russell B. Newton, vice president and general manager of Dan River Mills, Inc., Danville, Va., has been named executive vice president.

Dennis Noonan, Jr., former assistant superintendent of plant of Berkshire Woolen Mills, Pittsfield, Mass., will soon assume duties as superintendent of company's newly constructed branch plant at Monk's Corner, S. C.

James Oates, Sr., has resigned as superintendent of Cornelius Mills, Inc., Cornelius, N. C., to become head of carding department of Avondale Mills, Birmingham, Ala.

Lawrence E. Oliver, former superintendent of Lawrence Print Works, Lawrence, Mass, has been named manager of Exeter Mfg. Co., Exeter, N. H.

R. Smith Payne was elected executive vice president of Alabama Textile Products Corp., Andalusia, Ala., and chairman of board of Andala Co., Troy Textiles, Inc., and Enterprise Mfg. Co., at meeting of board of director of four companies.

Cabot Penney has become superintendent of Colonial Woolen Co., Cleveland, Ohio. He was formerly superintendent of Wyandotte Worsted Co., Pittsfield, Mass., and at Rochester, N. H.

Emery Richards has been named general manager of Airedale Worsted Mills, Inc., and Lippitt Worsted Mills, Inc., Woonsocket, R. I.; and of Lincoln Spinning Mills, Pawtucket, R. I. He will continue as director of laboratories for mills, which are units of Axelrod mill group.

W. W. Saunders has been made superintendent of knitting of Wiscasset Mills Co., Albemarle, N. C. **G. V. Whitley** is assistant superintendent of knitting department.

Ed Silk, formerly of Botany Mills, Passaic, N. J., has become assistant superintendent under **Everett Symes,** superintendent of Atlantic Mills, Stottville, N. Y.

D. D. Smiley has been appointed superintendent of Salisbury Cotton Mills, Salisbury, N. C., succeeding **B. M. Bowen,** who is retiring after 30 years.

W. F. Staples, former general manager of former Esmond Mills, Esmond, R. I., has become controller for Merrimack Mfg. Co., Lowell, Mass.

Thomas Watson has been appointed superintendent of plant of American Yarn & Processing Co., Maiden, N. C., succeeding **R. W. Faires,** now superintendent of company's subsidiary, Spun Fibers, Inc., Whitnel, N. C. Mr. Watson was formerly overseer of carding at Republic Cotton Mills, Great Falls, S. C.

Frank Williams, former vice president of Rosemary Mfg. Co., Roanoke Rapids, N. C. has been named president of firm, succeeding **William Manning,** retired.

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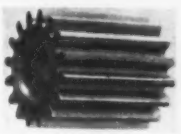

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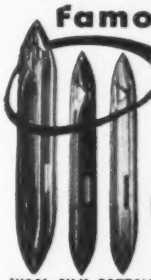

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WATSON-WILLIAMS MFG. CO. Millbury, Mass.

OBITUARY

Robert W. Allen, 65, cofounder and former head of Allen-A Co., died recently. He had won recognition as a pioneer in development of automatic machinery for the textile industry.

Edward Bains, 74, founder and president of Bloomsburg Hosiery Mills, Bloomsburg, Pa., died in July.

Morgan Butler, 60, president of Hoosac Mills Corp. and former president of the National Assn. of Cotton Manufacturers, died in July. Appointed treasurer of the Butler Mills in 1913, he brought the mills up from a small corporation with 10,500 spindles and 1,800 looms to one of the nation's leading textile firms. He was a director of the National Federation of Textiles and the Cotton-Textile Institute.

Edgar Cosman, 72, chairman of the board and former president of Continental Elastic Corp., New Bedford, Mass., died Aug. 8 in Basle, Switzerland.

Jean N. Guerin, 69, president, general manager, and treasurer of Belmont Woolen Yarn Mills, Inc., Woonsocket, R. I., died Aug. 18. A native of Liege, Belgium, he started his New England plant 35 yrs. ago.

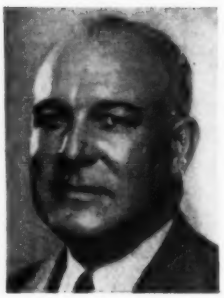
Sterling C. Mack, president of Mack Hosiery Co., Inc., died recently. He was superintendent of the knitting department of the Julius Kayser Co. mills at Bangor, Pa., for many years until he organized his own firm last year.

Charles A. McGill, 83, founder and retired head of the Charles A. McGill & Sons Co., New York, died last July.

Benjamin F. Miller, 75, president of Franklinshire Worsted Mills, Philadelphia, Pa., died recently. He was active in the National Association of Wool Manufacturers and the Philadelphia Textile Manufacturers Assn.

John A. Miller, for 12 years president of the Exposition Cotton Mills, of Atlanta, Ga., who retired in 1942; and prior to that, head of the American Textile Co., of Cartersville, Ga., died July 29.

J. H. Milne, president of Forster Textile Mills, Inc., died recently. A founder of the firm, Mr. Milne was associated with it since its inception in 1921.



ISAAC E. "IKE" WYNNE, 56 sales representative for Universal Winding Co. in Charlotte, N. C. since 1923, died recently. With the company since 1911, he served first as a draftsman in the engineering department, then was on leave of absence as a captain in the Coast Artillery Corps in World War I. He served as company representative in Mexico for two years before locating permanently in Charlotte.

John Oughton, Sr., 59, senior partner of the Windsor Mfg. Co., Philadelphia, Pa., died in July. Son of the founder of the firm, he began working for it in 1915 after graduating from Philadelphia Textile School.

C. Brooks Stevens, 84, president and director of Ames Worsted Co. and Lawrence Mfg. Co., Lawrence, Mass., died recently. He was a textile executive for more than a half century.

Frank Taylor, 79, president and treasurer of Thomas Taylor & Son Co., Hudson, Mass., manufacturers of elastic webbing, died in July.

J. Merrill Wright, 73, president and director of Franklin Cotton Mill Co., Cincinnati, Ohio, died recently.

Edward J. Burnell, 61, vice-president and general sales manager of Link-Belt Co., died July 22. During the war, he served on the advisory boards of the War Production Board and the War Department, and as consultant to the Reconstruction Finance Corp.

Earl Davison Hatheway, 68, former general manager of the Okana Knitting Co., died in Syracuse, N. Y., after an illness of six months.

John T. McDade, 74, treasurer and assistant secretary of the Art Loom Corp. before he retired two years ago, died July 18. He had been with the firm for 55 years.

Thomas H. Rennie, 94, who retired in 1936 as vice president and general manager of Avondale Mills, Pell City, Ala., died recently.

Louis Henry Saxton, 75, Norwich, Conn., an officer of the Saxton Woolen Corp. more than 30 years until his retirement in 1942, died July 17. He began in the woolen business in 1906 and operated the Clinton Mills with his father. In 1910, the family bought the Clinton Mills and continued the business under the name of Saxton Woolen Corp. until 1942.

Louis A. Aumann, 86, known for his work with textile machinery, died July 22. He served for 43 years as director of manufacturing operations of the Chicopee Div. of the Dwight Manufacturing Co. He had invented a number of improvements in textile machinery.

Charles A. Brower, 65, for 30 years superintendent of the Little Mfg. Co., Wadesboro, N. C., who retired about a year ago, died recently.

Louis J. Figg, 53, supervisor of the industrial laboratory of Tennessee Eastman Corp., Kingsport, Tenn., died recently after a long illness.

Thurston Kinsler, 67, former superintendent of the Central Cotton Mills, Central, S. C., died last June.

James L. Lohrke, 53, textile process inventor, died July 27. He invented the Perlok process in the field of synthetics, and operated an experimental mill at Paterson, N. J.

Ambrose L. Lutz, 58, for 25 years superintendent of the mechanical department of the Gambrill & Melville Mills Co., Bessemer City, N. C., died recently.

W. W. McIntosh, 80, former superintendent of textile plants in Graham, Burlington, and Haw River, N. C., died recently.

Maurice D. O'Connell, 63, chief designer and superintendent of Sterling Mills, Inc., Worcester, Mass., died recently.

Thomas G. Orr, 61, textile designer for J. P. Stevens & Co., of Great Falls, S. C., died recently. He had been with the company as designer many years, and was previously connected with mills at McColl, S. C.

Edward T. Pendergast, former superintendent of the Uxbridge Worsted Co., Pascoag, R. I., died July 13.

Alfred William Talbot, 64, for sixteen years chief engineer of the Botany Mills, Inc., in Passaic, N. J., died recently. An electrical engineer from Temple University, he was on the engineering staff of the Nevada Consolidated Copper Co. for ten years before joining Botany Mills in 1929.

Walter L. Thornburg, superintendent of Print Works Plant of Cone Finishing Co., Greensboro, N. C., died recently. He had been connected with the company for 31 years, the past six in the capacity of superintendent.

William O. Hornberger, 44, foreman in Wm. G. Leininger Knitting Co., Mohnton, Pa., drowned in a storm at Indian Lake, N. Y., recently, while boating there.

Michael E. O'Neil, 71, died recently. He had been employed as a foreman at the Cranston Print Works, Cranston, R. I., until his retirement two years ago.

Arthur Schwinge, overseer of finishing department of the Pyramid Piece Dye Works, Paterson, N. J., was instantly killed recently when a hydraulic calendar in operation suddenly exploded, and he was struck in the head by a cast-iron drum.

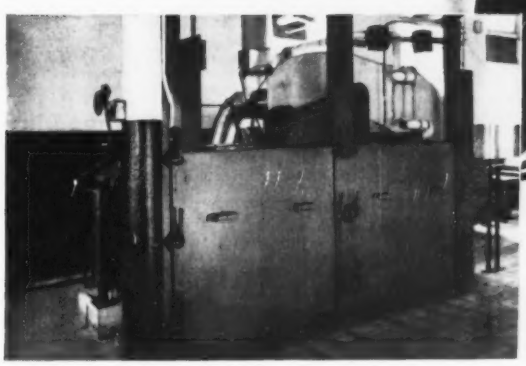
Irwin E. Starr, 58, of Ephrata, Pa., a foreman in Textile Machine Works, Wyomissing, Pa., died recently.

Arthur E. Dodd, 73, a lace weaver, died recently. At one time Mr. Dodd was room foreman at Phenix Lace Works. He retired in 1947 as foreman at Washington Lace Works, Washington, R. I.

A Recorder Chart Speaks

for

The Fleet Line YARN STEAMER & CONDITIONER



"I am a typical chart taken from the recording instrument on a Fleet Line Yarn Steamer and Conditioner in a well-known New England woolen mill. The graph line on my front shows how steam is fed automatically into the machines. Note that the peaks of this line form practically a perfect circle. That means that temperature and humidity conditions are UNIFORM in the machine at all times and this naturally results in uniform condition of the yarn, from bobbin to bobbin and batch to batch."

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OVERSEERS FOR FOLLOWING DEPTS: woolen woolen dyeing & finishing combined; worsted spinning and twisting; worsted and woolen finishing; worsted weaving; woolen carding; weaving Draper rayon looms; dry finishing; calendering on plastics; silk-rayon slashing foreman, U. S. and foreign; wet finishing; cotton-rayon dyeing; cotton ring spinning; dyeing and finishing crepes and satins (foreign); woolen raw stock and piece dyeing.

SECOND HANDS FOR FOLLOWING DEPTS: woolen carding; cotton carding; worsted and woolen piece dyeing; rayon weaving; dyeing silk yarns; wet and dry finishing; working foreman-loom fixer ribbon plant.

Mechanics and fixers Brinton, Komet and Links & Links machines on woolen gloves and mittens; industrial engineer needle industries (foreign); plush loom fixer; worsted pin setter, roller coverer and belt man combined; finished cloth percher, woolens; velvet loom fixer; assistant maintenance superintendent; worsted shear tender; foreman garnetting plant; sewing room foreman tricot fabrics; silk-rayon-cotton loom fixers; master mechanics; graduate chemist with rayon-cotton fabric processing experience for sales engineer; textile engineer familiar with Barnes system.

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330 W. 42nd St., New York 18, N. Y.

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For modern operating cotton mill in South America. Overseers for carding, spinning, winding and drawing-in departments; and loom fixer. All under 45 years of age. Experienced, technically proficient, tactful, good habits, and satisfactory credentials. Traveling expenses paid. Replies confidential.
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Chemical Company wants a Top-Notch salesman with thorough knowledge of the Weaving and Throwing of Rayon and Acetate and Silk Fabrics. To solicit business on Sizing and Throwing Compounds. Preferably man with Chemical Background.
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TEXTILE SCHOOL graduate, 20 years experience as foreman and superintendent in silk, rayon and cotton wishes position in Phila. or vicinity. PW 8007, Textile World.

MANAGER OR New York Technician. Good mill record, weaving and throwing, dress goods and neckwear. Textile Institute Graduate, reliable and competent. References. PW 9716, Textile World.

TEXTILE & Industrial Engineering graduate with 5 years' broad experience in cotton and rayon weaving and textile laboratory seeks position in weaving mill. First class references. PW 9662, Textile World.

S-3, S-6 Owners. Overseer employed open for a change. Weaver of good crepe on S-6 looms, prefer central states, best of references, 22 years experience. PW 9680, Textile World.

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POSITION WANTED: Supt. of Dyeing, age 35 years, married, B.S. Degree in Chemistry and 10 years experience in complete charge of a woolen and worsted mill. Have experience with raw stock, tops and piece goods using all classes of dyes. Can furnish the best of references as to quality and production. PW-9750, Textile World.

OVERSEER WOOLEN Carding desires position with reliable co. First class man in every detail of woolen carding. Sober and reliable. PW 9729, Textile W... d.

GENERAL SUPERINTENDENT. Fine background in rayon and silk weaving and throwing, plain and Jacquard. Open for proposition. PW 9715, Textile World.

ADMINISTRATIVE ASSISTANT . . . Assistant to Sales Promotion Director of leading textile firm. Has conducted retail store promotions, handled sales correspondence, prepared direct mail and publicity material, edited house organs. Now seeks responsible position with sales organization. College graduate with additional study in textiles. PW-9757, Textile World.

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Rayon Broad Cloth Mill Superintendent desires connection with progressive organization. Thoroughly capable manager specialist in quality production. A technician, throwster and conversant in all departments. A loom man.
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Good Background. Best of Reference.
Years of successful experience in the Manufacturing of Filament and Spun Synthetic Fabrics.
Specialist in Fancy Fabrics from Designing To Economic Production.
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Dyeing, Printing, Finishing, thoroughly experienced, good executive, and production planner, quality and cost conscious desires connection with responsible organization.
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330 W. 42nd St., New York 18, N. Y.

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LOOM FIXER who understands New S-6 very thoroughly wants position as fixer or overseer. PW-9431, Textile World.

GRADUATE MECHANICAL Engineer - 15 years Textile Plant Engineering experience, including 5 years cotton finishing plant maintenance, desires connection in plant development or sales engineering. PW-9770, Textile World.

BUSINESS OPPORTUNITY

WANTED: AN ORGANIZATION that can give service in styling of fabrics for a jacquard plush mill, bringing out new designs, creating new fabrics of all types for the upholstery trade. BO 9328, Textile World.

Are you in need of a man
to take over major responsibilities? Young textile executive with excellent education and experience is desirous of investing capital and service in financially sound yarn and/or cloth mill. Reply BO-9780, Textile World.

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Large engineering firm wishes to acquire several complete textile plants through purchase of (1) capital stock, (2) assets, (3) machinery and equipment, whole or in part. Personnel retained where possible, strictest confidence.
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FOR SALE
16—16 Carrier Wardwell Braiders
In excellent running condition
Reasonably Priced—No fair offer rejected
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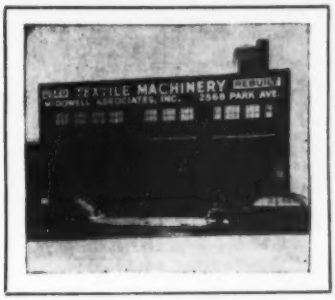

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DYEING AND FINISHING

1 UP AND DOWN WET BRUSH, 66" on Bristles.
1 VERTICAL BRUSH, 6 roll, 66".
1 BRUSH with STEAMER, 2 roll, 66", mtrzd.
1 BRUSH AND SANDING UNIT, 4 roll, 66".
1 CALENDER ROLLING HEAD, 48", heated.
2 FRICTION CALENDERS, 3 roll, 43½", 50".
1 CALENDER, 3 roll, 50", Screw and Lever.
1 CALENDER, HYDRAULIC, 3 roll, 60", mtrzd.
1 CRAB, 4 bowl, 70" wide, squeeze rolls, vacuum slot, pump, motors, extra bowls included, etc.
1 CARBONIZING CLOTH DRYER, 70", with acid tank, motor and drives.
1 SEMI-DECATUR, 72" Nash pump, blanket and motors.
1 FULL DECATUR, 72", pump, cooling rack.
1 DEWING MACHINE, 66", copper feed tank, drain trough, rotary pump, mtrzd.
4 DOUBLING, WINDING and MEASURING MACHINES, 50", 60", 72", 80".
1 SET 21 DRY CANS, 72", horizontal stack.
1 PIN TENTER DRYER, 78", fans, housing, motors, complete.
1 PIN TENTER DRYER, 84", fans, housing, motors, complete.
1 RAW STOCK DRYER, 3 tier, 72".
1 DRYER SKEIN CONTINUOUS, 108" width.
1 DYE KETTLE, 9', SS Lined, mtrzd.
4 FLEET LINE SS STOCK DYE KETTLES, 100# ea., 1940 Model, mtrzd.
3 EXTRACTORS, 48", 72", 96", copper baskets, mtrzd.
3 FOLDERS, 1 yard, 40", 56", 60".
3 FULLING MILLS, double compartment.
2 INSPECTING MACHINES, 60", 100", forward and reverse motion.
14 JIGGS, 50", SS, tilting expanders, etc.
6 JIGGS, 60", SS lined, tilting expanders, etc.
1 MEASURING ROLL, 72", swing folder, 60 yd. dial, mtrzd.
1 MEASURING UNIT, 66", 100 yd. dial, mtrzd.
2 NAPPERS, 72", S.A. 12-14 roll units, folder takeoff.
1 NAPPER, 90", SA, 20 BB Working Rolls, folder takeoff.
2 NAPPERS, 80", 90" DA, 24 roll, folder takeoff.
2 NAPPERS, 90", DA, 36 roll, folder takeoff.
1 PALMER, TENTER, QUETCH UNIT, 80", mtrzd.
3 POWER PERCHES, 72" roll, clocks, mtrzd.
2 POWER PERCHES, 66", table type mtrzd.
1 PRINT MACHINE, 4 color, 66".
2 ROTARY STEAM PRESSES, 66", 69".
6 THREAD DRESSING UNITS 2 and 3 brush, 38".
1 REEVES #3 CLASS E, ENCLOSED DRIVE.
2 WOOL SCOURING UNITS, 5 bowl, 49", 54", with dryers.
1 SCOURING BOWL, 48" x 27" long, complete.
1 SKEIN SCOURING UNIT, 2 bowl, 300# capacity.
1 SKEIN SCOURING UNIT, 3 bowl, 72" wide.
1 SCUTCHER, 66", brass beater and scroll rolls, vacuum slot, pump and folder.
1 SEWING AND ROLLING UNIT, 56" goods with batcher, motorized.
5 RAILWAY SEWING MACHINES, 40", 50", 52", 58", 66".
1 RAILWAY SEWING MACHINE, 50", MERROW HEAD, mtrzd.
1 SHEAR, 4 blade, BB 60" automatic seam-thru attachment, cloth rolling stand, mtrzd.
3 SHEARS, MODEL "B", double blade, 66½" with list saving rests.
2 SHEARS, MODEL "A", double blade, 66½" with list saving rests, mtrzd.
1 SHEARING, STEAMING AND BRUSHING UNIT, hooked in tandem, consisting of 2 steamers, 2 double blade 66½" Shears with list saving rests, single roll brush with folder.
1 HOT AIR SLASHER 92" width, double size box, 4 double rows, steam coils.
1 SLASHER 3 drum, 57" x 7' diameter, size box, mixing kettle, mtrzd.
1 SQUEEZE SET, 3 rubber rolls, 116" rubber like new, screw and lever set.
1 TENTER FRAME CLAMP 90' x 52", mtrzd.
1 TENTER FRAME CLAMP 70' x 60", mtrzd.
1 TENTER FRAME PIN 30' x 80", mtrzd.
1 TENTER FRAME, PIN 60' x 72" mtrzd.
4 TUBING, WINDING & MEASURING MACHINES, 42", 45", 50", 60".
2 WASHERS ROPE, 6' log rolls, 18" dia.

CARDING AND SPINNING

150 M automatic 8¾" BOBBINS.
1 BEAMER, high speed, accommodating up to 82" beams.
1 CARD CLOTHING TENSION MACHINE, 60"
4 WORSTED IRON CARDS, 2 cyl., 60" x 52".
5 WOOL IRON CARDS, 3 cyl. 60" x 60", Peraltas, Tape Condensers.
1 WOOL IRON CARD, 4 cyl. 48 x 60, Tape Condenser.
3 TAPE CONDENSERS, 48", ball bearing, 96 ends.
1 DX CREEL, Super-Structure Type, 360 ends.
1 CONE DUSTER, 80", with Condenser.
1 GARNETT, 3 cyl. Ball Bearing, 30 x 60.
2 GARNETTS, 2 cyl. ea., BB, 20 x 60, camel back, Blamire Lapper, compression rolls and slitter.
8 MULES, GP, 360 spdls. ea., 2½" gauge.
8 MULES, GP, 320 spdls. ea., 3" gauge.
2 WOOL OPENERS, 48", double cylinders.
1 FEARNAUGHT IRON MOXING PICKER, 48 x 48, with new teeth in main cylinder.
1 RAG PICKER, 25", V Belt Pulley Drive.
5 WOOL SPINNING FRAMES, 192 spdls. ea., 4½" gauge, 3" ring.
1 ABBINGTON CARD STRIPPING SYSTEM, 1948 Model, 57 nozzles, complete.
3 TWISTERS, 80 spdls., ea., 4" ring, mtrzd.
2 TWISTERS, 100 spdls., ea., 5½" ring, mtrzd.
2 TWISTERS, 108 spdls. ea., 6" ring, mtrzd.
1 FOSTER #30 CONE and TUBE WINDER, 100 spdls., mtrzd.
1 FOSTER #101 CONE WINDER, 100 spdls., mtrzd.
3 UNIVERSAL #90 BOBBIN WINDERS, mtrzd.
1 LAZENBY JR. 30 spdl. auto. COP WINDER, V Belt Pulley Drive.
4 WARPERS PIN TYPE, 9'3" wide, reel, beamers, compressors, tracks.

WEAVING (LOOMS)

147 DRAPER "E" 32" 5 harness, belt driven.
140 DRAPER "E" 36" 2 harness, belt driven.
63 DRAPER "P" 40" belt driven.
100 DRAPER "E" 40" 2 harness, motorized.
72 DRAPER "X" 42" 6 harness, motorized.
28 DRAPER "X" 48" 25 harness, motorized.
52 DRAPER "E" 44", 2 harness, motorized.
5 DRAPER "X", 48", 2 harness, motorized.
150 DRAPER "XD", 50", motorized, 20 harness.
68 DRAPER "D", 81", 25 harness, motorized.
24 DRAPER "D", 86", 4 harness, motorized.
130 STAFFORD 54", 2 x 1, 20 harness, mtrzd.
63 STAFFORD 66½", 20 harness, motorized.
150 C&K S-5 54" 2 x 1 auto., dobbies, mtrzd.
12 C&K 52" 4 x 1 auto., 25 harness, motorized.
35 C&K S-3 56", 2 x 1 auto., gem head, mtrzd.
21 C&K 60", 4 x 1, motorized, auto.
12 C&K 64", 4 x 4, motorized, 25 harness.
60 C&K 72", 4 x 1 auto., 20 harness, mtrzd.
14 C&K 76", 4 x 4, 25 harness, motorized.
14 C&K 82", 4 x 1 auto., 25 harness, mtrzd.
12 C&K 82", 4 x 4, 25 harness, belt driven.
8 C&K 92", 4 x 1 auto., 25 harness, mtrzd.
14 C&K 92", 4 x 4, 30 harness, motorized.

Also parts and supplies such as Blowers, Card Clothing, Doffers, Motors, Expander Rolls, etc.

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Tel.: MElrose 5-6741

OPENING CARDING & SPINNING

1—Whitin Bale Breaker w/feed hopper
1—Woolen Card 55 x 60, 3 cyl., 30" doffer
3—D&F Worsted Cards, 2 cyl., 36 x 60
1—Cotton Yarn Conditioner w/motor drive
2—Whitin Drawing Frames, 6 del. Model H
28—Saco-Pettee Cotton Cards, 40"
12—Saco-Lowell Drawing Frames, 4 del. 1945 Model
16—Whitin Spinning Frames, 240 sp, 3¼" gauge, Roth L.D.
27—Whitin Spinning Frames, 252 sp, 3¼" gauge, Roth L.D.
1—Kitson W-3 Waste machine.
1—B.C. Model KK auto. Spooler, 140 sp.

WARPING & WINDING

1—McBride Creel, 300 spindles
8—Universal Winders, #50, 60 spdls. each
2—Foster Model 101, 80 sp., wooden cones
10—Universal #90 winders, 20 sp. bunch builders
4—Barber-Colman H.S. warpers, 54" width
1—Sipp Eastwood Creel, 730 ends, 3½ lb. cone
1—Cohoes Slasher, 2 cyl. for 54" beams
1—Sipp Eastwood Silk Warper, 83" wide, 1000 end cone creel

COMPLETE MILLS

Cotton Print Cloth Mill, 22,000 sp., 600 looms
Cotton Yarn Mill—10,000 spdls.
Cotton Spinning & Weaving—20,000 spdls., 427 looms
Cotton Printing Plant—2 print machines
Cotton Bleaching & Mercerizing Plant
Worsted Yarn Mill, 3360 spdls.
Worsted Spinning—11,200 spdls.
Worsted Weaving Plant, 24 looms
Woolen Yarn Mill—1,648 spdls.
Duck Weaving Plant—8 looms
Rayon Dyeing & Finishing Plant
Rayon Throwing Plant
Rayon Weaving Plant, 95 looms
Spun Rayon Spinning Plant—6,640 spdls.

LOOMS

100—Draper K, 40"—dobby w/motor
130—C&K C6, 54", 4x1, 25 harness
110—C&K S5, 56", 20 harness dobby
245—Draper XD, 50" w/1 h.p. motor
100—Draper E, 44" w/motor
64—C&K 2x1, 52", non-auto. w/motor
14—C&K, 4x4, 72" w/motor
12—C&K, 4x1, 64", 25 harness, w/motor
28—Ribbon Looms, 24 hook, 8" warps
21—C&K C4, 60", 4x1, w/motor
58—Draper X, 46" w/motor
35—C&K S3, 56", 2x1 auto. w/motor

DYEING AND FINISHING

1—Calender, 108" wide, 3 rolls
1—Butterworth Hydraulic Calender, 2 rolls, 42" width
1—Cavagnaro Embossing Calender, 45 inch width, 30 ton
1—V.V. 7 drum Boil-off, 60"
8—Copper Dry Cans, 72" width, vertical stack
1—V.V. Semi Decator, 72" width
1—Smith-Drum skein dryer, 60 reels
1—Vacuum Dyeing machine, 1000 lbs capacity
1—V.V. Calender, 60", 3 rolls
2—V.V. Dye Jiggs, 50" width w/motor
1—V.V. Centrifugal Extractor, 60" w/motor
1—Mangle, 2 rolls, 146" width
1—Butterworth Tenter Frame 60'x60" w/drive
1—W&J Tenter Frame, 80'x50", 7 burners
2—Cottage Steamers 8'x20'
1—Embossing Calender, 2 rolls, 50"
1—Philips Mixing Copper Kettle, 100 gal.
1—Open Soaper, 44" width, 2 sets nip rolls
1—V.V. Singer, 60" width, 4 burners
1—P&S loop dryer, 40' long double run

REMEMBER

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TRIANGLE OFFERS

3—BATCHERS, 2 roll 50", 60", 70". New
1—BEAMER, Cocker, Recollecting, new
8—BEAMERS, Paterson 50", 60", 70". New
3—BOARDING, Drying & Stripping mach., auto. 30 boards ea.
1—BOBBIN STRIPPER, Terrill model L, mtr.
1—BRUSHER—C&M 60", 2 cyl. steam trough.
2—CALENDERS, Moire, 38" & 42" cloth
8—CALENDERS, embossing, 50" to 72", 2 roll
1—CALENDER, 41" K & G, 10HP mtr. 15 ton
1—CALENDER, 50" Hydro, 3 roll, 25 ton, mtr.
1—CALENDER, 56" Hydro, 2 roll with mtr.
1—CALENDER, 60" VV 3 roll, 7½ HP mtr.
1—CALENDER, 80" VV 3 roll Hydro 7 bowl
1—CALENDER, 80" 3 roll lever set, 6 bowl
1—CALENDER, 3 roll, 2 p., 1 brass
2—CARDS, 55x60, & 60x60 D&F, all iron, 3 cyl.
1—CARD, Sample, P&S main cyl 20", 16" doffer
51—CARDS, H&B 45" good condition
1—CONDENSER, ceiling type, suction, P&S
1—CONDITIONING mach. for 60" cloth
1—CREEL, 500 end, Jack, 1946, elec. stops
1—CREEL, 300 end, Honeycombe, with tensions
1—CREEL, 730 live ends, S-E, 3¼ lb. cone.
2—DECATORS, Semi Yale & P&W, 62" & 72"
17—DOUBLERS, Atwood ZH, 6" gge. 84 sp. ea.
48—DELIV. DRAWING, Whitin Mod. H, 4 del.
58—DELIV. DRAWING, H&B, elec. stops, 12"
1—DRY CAN Set, 8 cans, 60" comp.
1—DRY CAN Set, 15 cans, SS, 60" Werner
1—DRY CAN Set, 16 Vertical cans, 56" face
1—DRYER, 5 can vertical, 50" face, comp.
1—DRYER, 8 can Horiz. 50" face, comp.
1—DRYER, Heathcote horiz. to 64"
1—DRYER, Sargent #1109, stock dryer, 72"
1—DRYER, Hunter, raw stock, 6 sections
1—DRYER, P&S skein, all metal, w. mtrs.
2—DYEING mach. for skeins, 100 arm & 20 arm
1—DYEING, skein, K-W, 28 stick, hoist type
1—DYEING, Franklin process, 7 SS sp.
1—DYEING, 300 lb., pkg. dye
2—DYEING, 500 lb. raw stock, Hussong
1—DYEING, 500 lb. raw stock, Franklin
1—DYE BOX, SS lined 10", SS reels, mtr. drv.
2—DYE JIGGS VV 50" SS, year old
1—EXTRACTOR, VV 42" self bal. top mtr. drv.
1—EXTRACTOR, 8 basket indiv. pkg. comp.
1—EXTRACTOR, all SS, 60" basket, comp.
1—EXTRACTOR, Vacuum 60" with pumps
4—EXTRACTORS, 48" copper baskets, S-U, Tolhurst & Fletcher
1—EXTRACTOR, 42" Fletcher style E, hydro
1—EXTRACTOR, 60" Centrifugal, VV, mtr.
1—FOLDER 50" for silk, 1¼ yd. fold
1—INSPECTING, Tubing & Measurograph mach. 60" goods
4—KNITTING mach. Tricot, 14 & 28 gge.
400—LOOMS, Models D, K, E, X, Draper, from 32" to 90" r.s.
100—LOOMS, 47½" r.s. C&K 4x1 auto.
187—LOOMS, 50" r.s. C-6 C&K dble. index dobby, 25 harn.
68—LOOMS, 50" r.s. XK, dble. index, 20 harn
48—LOOMS, 52" r.s. 2x1 auto. 16 harn. gem
58—LOOMS, 54" r.s. S-3 C&K 2x1 auto. 20 harn.
120—LOOMS, 54" r.s. S-5 & S-6 C&K 20 harn. mtrs.
250—LOOMS, 57" r.s. XD, rayon, 20 harn.
30—LOOMS, 60" to 64" r.s. C&K 4x4, mtrs.
21—LOOMS, 60" r.s. C-4 auto. 4x1, w. mtrs.
12—LOOMS, 72" r.s. W-3 C&K 4x1 auto. 25 harn.
92—LOOMS, 72" & 76" r.s. C&K 4x4 jacquards
50—LOOMS, 72½" r.s. XD, 20 harn.
54—LOOMS, 82" r.s. 4x4 C&K, medium shuttle
12—LOOMS, 82" r.s. W-3 auto., intermed. heads, mtrs., stops
32—LOOMS, 92" r.s. 4x4 heavy worsted, 25 harn.
24—LOOMS, 92" r.s. 4x1 auto. comp.
16—LOOMS, 112" r.s. 4x1 auto. 25 harn. gem
5—MANGLES, 50", 60", & 80" face 3 & 5 roll
4—MEASURING Machines, 50", 60", 70". New
1—NAPPER, 60" Verdulin, 18 rolls, Reeves drv.
1—PALMER, 60" with Reeves & mtr.
2—PADDERS, 52" & 60", 2 roll
2—PICKERS, Clark, raz. BB, 30" dia. cyl.
4—PRINTING mach., 2, 3, 4, 6 & 12 color, 40" to 60"
1—QUETSCH, 60" 2 roll, can, Reeves Drv.
1—QUILLER, Abbott auto. 100 sp.
12—ROVING Frames, 160 sp 5½" gge, long draft
1—SCUTCHER, 50" Lapland, ceiling type
1—SHEAR, 66" P&W
1—SINGER, 54" 2 burner
1—SINGER, 63½" 4 burner, gas, mtr.
1—SLASHER, Johnson 7 can
1—SLITTER, Cameron, 32", 1944 model
1200—Sp. SPINNING, 2½" to 4½" gge.
10—SQUEEZE ROLLS, 60"
1—TENTER, 140" x 20' long, brass pin clips, carbomatic & infra-red burner
1—TENTER, 60" x 40', SS clips, VV, housing
1—TENTER, 60" x 40', pin tenter, Butterworth
26—TWISTERS, Whitin wet tape drv. ring
6—TYING-IN, B-C, mod. K, 4E, L-117, E, 4J
1—WARPER, 84" S-E, 8 yd. mtr. & 612 pin creel
1—WARPER, S-L, HS, 400 end comb, elec stops
8—WARPERS, B-C, HS, 432 end creels
1—WASHER, Birch, 60" continuous
1—WINDER, Cop, 20 sp. comp. w. mtr.
2—WINDERS, Foster #101, 80 sp. per frame.
4—WINDERS, Sipp skein, 80 sp. with swifts
4—WINDERS, Abbott travelling cone winders
2—WINDERS, Roto Cones, Univ. #44, 120 sp. 6" tras.
80—WINDERS, Heads of Schweiter

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1—58 James Barrett 4 Color Printing Machine

26—72" C&K C-4, 1949 Model Auto. Convertible Looms 20 Harness Intermediate head motions, motorized

2—48" V. VL S/S lined Dye Jiggers
3—52" Werner S/S " " "

4—45" 2 & 3 Roll Padders
1—76" 3 Roll Padder

13—10" Lowell Cards, 12" Coilers
20—40" Mason Cards, 12" Coilers

1—25" Schoefield Rag Picker
1—42" Phila. Textile Mixing Picker
1—80" S&F Iron Cone Duster with condenser

2—40" H&B (1926) Single Process Pickers, 3 Beaters
2—29 Saco Lowell Condensers
1—40" D&B Picker with feed apron, auto. feeder, 2 porcupine beaters, eveners, etc.
1—Kitson Hopper Feeder with extended apron, hooked to a D&B Vertical Opener.
2—Kitson Openers with Hopper Feeders
1—Murray Cleaner
1—Tatham Thread Extractor

5—110 sp. Barber Colman Model KK, 1926 Automatic Spoolers, motor driven
3—Barber Colman 1926 High Speed Warpers, with 432 end creels.
1—Barber Colman 5-F Stationary Type Warp Tying-In Machine
1—40 sp. Barber Colman Tailing machine, motor dr.
1—50" Curtis & Marble Shearing & Brushing machine with 4 blades, 4 brushes, Singer head, with blower
1—24 sp. Foster Model 101 Cardboard Coner
36—80 sp. H&B Rubber Covering machines

12—276 Sp. S.I. 1949, Model 38, 1-3/4" R, 3-1 2" ga. Long Draft Spinners, motor driven.
10—264 Sp. Saco Lowell, 1947, Mod. 38, 2-1/2" R, 3-1/2" ga. Long Draft Spinners, motor driven.
1—220 Sp. H&B 1-3/4" R, 3" ga. Wet Twister.
4—180 Sp. Draper 2-1/4" R, 3-1/2" ga. Wet Twister.
1—144 Sp. Whitin 3" R, 4-1/2" ga. Wet Twister.
18—100 Sp. Atwood Mod. 210, 1948 Ring Twister 4" R, 7" ga.

1—60" Furbush Card Grinder
1—Card Clothing Jack

38—Loom Mill 54" and 56" Wide Draper Automatics, with Universal 400 Winders and supplies.

1—36" Chenille Cutting Machine with Blower and Dust Collector
5—C&M Reversible Flock Cutters

12—82" C&K 4 x 1 Automatic 25 Harness Looms, Motor driven.
2—82" and 92" D&F Warper with hack stand, neck reed, and Beamer.

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BACK WASHER DRYER Item K-BW
Taylor Wadsworth—12 Cylinder

RAW STOCK DRYER Item K-B
Sargent—Est. Capacity 600# per hr.

DYE KETTLE FOR TOPS Item K4155
Franklin Process Co.
7 spindle—42 top capacity—250#

DYE KETTLE FOR TOPS Item K11558
American Obermaier Corp.
4 spindle—Est. Capacity 280#

DYE KETTLE FOR TOPS Item K9043
American Obermaier Corp.
1 spindle—Est. Capacity 70#

DYE KETTLE—STOCK Item 12152
1 spindle—Vomit Type—70# Capacity

2 DYE KETTLES FOR RAW STOCK Item K-L259
Riggs & Lombard Item K-L260
4 spindle—Capacity 295#
Reverse Flow—Stainless Steel

CENTRIFUGE or VAC. EXT. Item R-B
Stainless Steel Throughout
60" Basket—High & Low Speed

HYDRO-EXTRACTOR or WHIZZER Item K-HE
W. H. Tolhurst & Son
42" Lead Lined Copper Basket

SPINNING

OPENER—Sargents Item L-11
36" Machine—2 Spiked Cylinders

2 DERBY DOUBLERS or SLIVER LAP MACHINES Item N-H
Saco-Lowell—making 20" Lap

ROTH LONG DRAFT COTTON SPINNING FRAME ATTACHMENTS Item NL-R
For Saco-Well 4¼" Gauge
For Approx. 10,000 Spindles

12 HUMIDIFIERS—Bahnson Item BH-NH

WINDING

2 WINDERS—Universal Item N-RC2
Model #44 Roto-Coners—6" Traverse
120 Spindles ea.—Cone Winding

WINDER—Universal #90 Item FM-2
4 Sections of 20 Spindles Each
Set up to run as single unit

QUILLER—Whitin Model J Item FM-1
304 Spindle 3½" Gauge 10½" Traverse

CREEL—McBride 300 Spindle Item 12196
8" Vert. & Hori. Centers
Individual Brakes & Elec. Drops
Stainless Steel Pigtail Guides

60 YARN RACK PIN TRUCKS Item N62949
To Carry 100—8" Dia x 6" cones

FINISHING

YALE SEMI-DECATING MACHINE Item B4149
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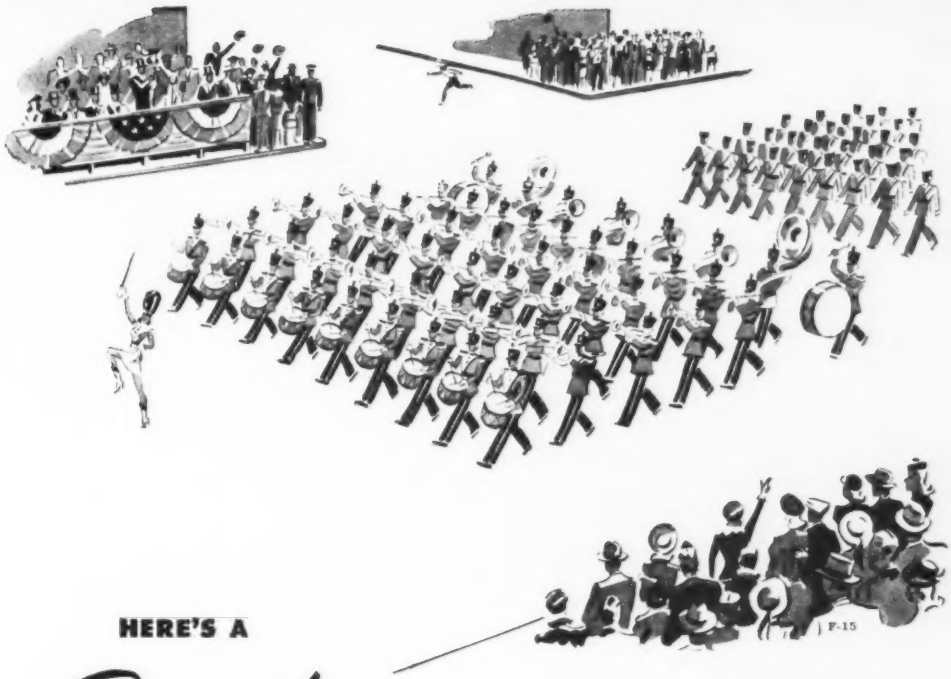

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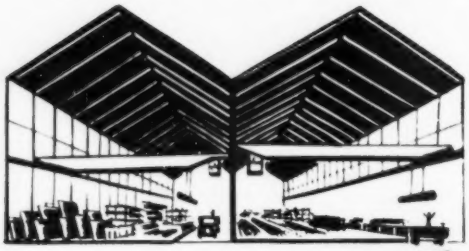

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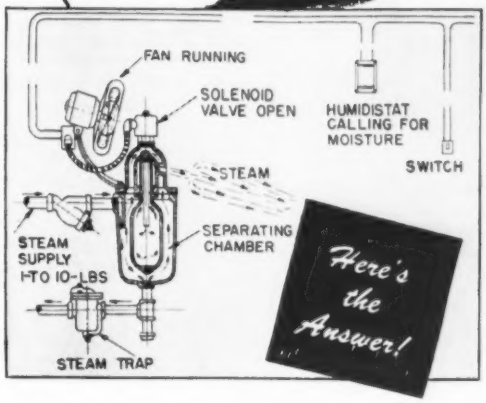
HUMIDIFICATION REDUCES FIRES IN PICKER ROOMS!

"In mills having opener-picker room humidification, the AVERAGE FIRE FREQUENCY WAS ONLY 39% and AVERAGE FIRE DAMAGE ONLY 35% of the average at all mills."* —Textile World



STUDIES by Factory Mutual Laboratories show that moisture content is the most important factor in the susceptibility of cotton to ignition and also influences the rate of flame spread after ignition. Where a relative humidity of 50% to 60%, figured at 70° F. is maintained, fire-frequency probability is substantially reduced. This is further borne out by the fact that there are fewer fires in the summer when relative humidity is high. Higher humidity also results in better control of lap weights, which are directly affected by percentage of moisture in the fiber.

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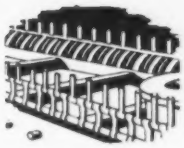

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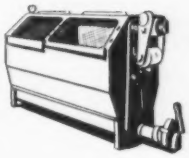

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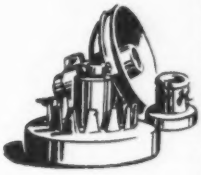

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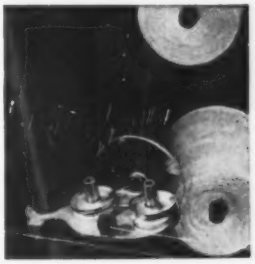

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